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ABSTRACT

This guide details the development of a 10-year Comprehensive Educational Facilities Plan (CEFP), along with its components and governing regulations. Chapters examine the CEFP process and requirements in the following areas: educational facilities planning; site design; common facilities necessary for school operation; facilities for primary education, and junior high and high school education; instructional areas for exceptional students; vocational educational facilities; general support facilities; facility safety; surface and other facilities such as those involving engineering and custodial services; and environmental controls. The guide's final section addresses statutes, procedures, and tasks relative to preparing and submitting the CEFP for approval, including on-site inspections by state officials and current standards for existing facilities. (Contains 21 references.) (GR)

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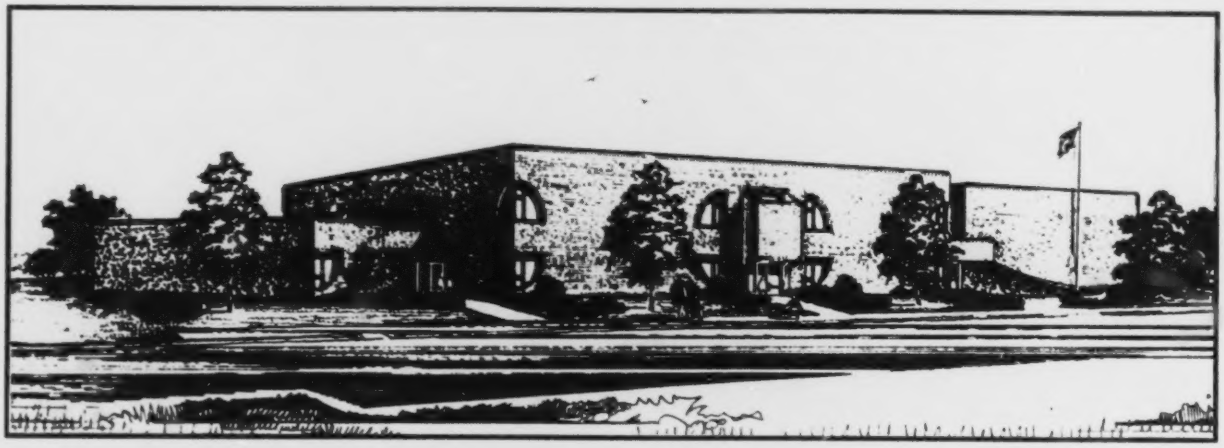
HANDBOOK ON PLANNING SCHOOL FACILITIES



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HANDBOOK ON PLANNING SCHOOL FACILITIES

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WEST VIRGINIA DEPARTMENT OF EDUCATION

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Approved by the West Virginia Board of Education, May 14, 1998

Carolyn Arrington, Assistant Superintendent
Division of Administrative Services

Henry Marockie, State Superintendent of Schools

FOREWORD

The West Virginia Board of Education has adopted this Handbook on Planning School Facilities to provide comprehensive guidelines which address the details of evaluating and renovating existing public education facilities and the construction of new school facilities. Periodic revisions may be necessary in order to meet the demands of evolving educational programs.

The creation of the School Building Authority of West Virginia by the West Virginia Legislature has resulted in one of the most ambitious school construction programs in the United States. The School Building Authority has granted funds for construction throughout the state resulting in modern, state-of-the-art public school facilities with quality educational programs for students in West Virginia.

The West Virginia Department of Education has the responsibility to provide assistance to county school districts through the Office of School Transportation and Facilities. The handbook offers additional assistance with renovations, construction of new school facilities, and developing or amending their Comprehensive Educational Facilities Plan.

This handbook is a working document and should be used as such during all planning stages of evaluation and construction.

Henry Marockie
State Superintendent of Schools

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Chapter 1

SCHOOL FACILITIES PLANNING

100 COMPREHENSIVE EDUCATIONAL FACILITIES PLAN (CEFP)

Each county shall develop a ten year Comprehensive Educational Facilities Plan (CEFP) as described in the following sections. The CEFP shall be submitted to the state Board of Education and the School Building Authority of West Virginia state Board (SBA) in the format described in this chapter. This plan is to be updated annually, and rewritten every ten years thereafter beginning with the plan submitted in 1990. Approval of the county CEFP must be granted by the state Board of Education and the School Building Authority. Approval must also be granted by the School Building Authority prior to funding any project through the SBA, and prior to utilization of federal funds for school improvement (WV Code 18-9D-15). The CEFP must include all projects that alter the instructional square footage of the facility or exceed $25,000 regardless of the funding source. Routine maintenance projects may not be included in the CEFP unless state funding will be requested or utilized to implement them or if such projects are a part of the Major Improvement Plan (MIP). Required amendments to the plan and/or the plan budget must be submitted to the state Board of Education and the School Building Authority for approval prior to the initiation of any construction or renovation project.

The development of a ten year CEFP must be achieved in the following manner:

1. Establish a CEFP planning team and committees representative of citizens and staff from each high school attendance area.
2. Develop countywide goals and objectives and evaluate previous ten year plan.
3. Research and compile data indicated in key elements A through G in Section 100.01 of this chapter.
4. Translate educational needs into facility needs.
5. Develop a finance plan to implement the facility improvements.
6. Conduct public hearings and develop a synopsis of public comments.
7. Develop an objective methodology for evaluating the effectiveness of the plan. This evaluation is to occur during the eighth year of the ten year planning period.
8. Meet with an official of the SBA to assure that the plan meets their mission and goals.
9. Submit proposed CEFP to the local board of education for approval.
10. Submit the CEFP to state Board of Education and the SBA for approval.

Should the plan be altered prior to the ten year anniversary date, the revised

CEFP shall be submitted to both the state Board of Education and the School Building Authority with the amendment for approval.

100.01 Goals and objectives of the Comprehensive Educational Facilities Plan (CEFP) must be developed and adopted by the county board of education. These goals and objectives must consider all aspects of the educational and facility needs of the county. Long term goals and objectives must be anticipated and strategic planning established to perform comprehensive systemic planning. Minimally, curriculum delivery models, grade configurations, maximum and minimum school sizes, community expectations, optimal student populations and the number of facilities that can be effectively maintained given limited resources available to the county should be addressed.

Key elements for analysis and consideration in the county plan must include the following components:

A. Goals and Objectives
B. The community analysis
C. Population and enrollment study
D. The educational plan
E. Evaluation and inventory of existing facilities for compliance with state requirements
F. Major improvement plan for existing facilities
G. Inter-county facility feasibility study
H. Translating educational needs into facility needs
I. Financing plan–includes a prioritized list of all project within the county and their estimated costs
J. Synopsis of comments from the public hearing(s)
K. Evaluation method and criteria

100.011 The Community Analysis

References:
2. C - 3 & 4

100.0111 A survey of community's history provides a background against which present conditions acquire meaning. The following aspects of a county's development should be studied carefully in regard to each school community. Please use maps and charts, when available.

A. Population characteristics and density patterns.
B. Population changes due to migration patterns and to fluctuations in the birth rate.
C. Changes in land usage (residential, commercial and industrial)
D. Major highways and street networks and their probable future development
E. Changes in socio-economic patterns resulting in population shifts within the community
F. Condition and value Class I, II, III and IV property assessments
G. Availability of community services - libraries, recreational areas, health services, public assembly space
H. Employment opportunities
I. Parental expectations of the school
J. Citizen attitudes and aspirations in general
K. Possible shifts in housing patterns
L. Study of school attendance zones as they relate to the dispersion of the county school population

100.012 Population and Enrollment Study

References:
2. C - 4 - 7

100.0121 In general, the following statistics are essential components of the enrollment projections:

A. Population trends
  1. County
  2. Each school community
B. Birth rates and the number of births
C. Public school enrollment figures and trends for the past ten years
D. Historic non-public school enrollment figures, as available
E. Drop outs and average attrition rates and trends for the past ten years
F. Ten year enrollment projections per school calculated by an approved method which considers the above components

100.013 The Education Plan

References:
2. C - 7 & 8

100.0131 The Educational Plan proposed for this ten year planning period provides a standard against which existing facilities can be measured ie.,how well do the facilities support the goals defined in the plan. This includes an analysis of the current educational program and projections of the planned educational program. The educational plan shall include the following areas:

A. Describe the educational system proposed for this ten year CEFP and how it will improve instructional delivery.
   1. Describe how the existing plan does not meet the county goals and objectives and how the new plan will meet these goals.
   2. Will the school system be predominately organized on a K-4, 5-8, 9-12, or some other pattern?
   3. Will the typical one-teacher-per-class pattern be followed, or are teaching teams to be involved all or part of the time?
   4. Generally, will there be self-contained or departmentalized classroom instruction?
   5. Generally, will there be typical grade patterns or will there be an ungraded or flexible grouping of pupils?
   6. What will be the maximum or minimum enrollment and total number of instructional areas in each building?
   7. What method of scheduling will be utilized in each building? (traditional, block, flexible, year-round, or other). Indicate the number of periods in each instructional day.
   8. What is the plan for providing vocational/technical education?

B. The curriculum plan -What knowledge,

understanding, attitudes, skills and habits of life should be developed through the experiences provided for children?

1. What are the general characteristics of a high quality school program?
2. Are they any groups of youngsters whose needs are not now adequately accommodated? (ie.,handicapped, gifted, etc.)

C. The instruction plan - Program description and methods of instruction.

1. What will be the major components of the instructional program? (ie., general course of study; vocational, adult or community education; special education; driver education; physical education; co-curricular activities; computerization and technology; or advanced courses in science, math, language arts, and social studies, etc.)
2. Will the instructional program be organized into semester subject matter units, mini-courses, core programs, experimental learning units, or some other basis?

D. The operations plan - Design and conduct of the teaching and learning environment.

1. Will the environment encourage openness in education or structure or both?
2. Will the educational environment go beyond the classroom? (ie., into the community)
3. What, if any, major changes in the teaching-learning environment are anticipated to more fully achieve the county's/state's educational goals?
4. What effect, if any, will technology have on the education environment? (ie., distance learning programs, resource programs)

E. The support plan

1. What kinds of support services are essential to carry out the instructional

plan) (ie., cafeteria, health, library, transportation, guidance, educational technology support, Alternative Learning Center)

2. How will these services be more operationally efficient in the new plan?

F. The personnel plan - professional and support services staff

1. What allocation of staff will be made (to each building) to implement the educational plan?
2. Describe how professional staff efficiency will be addressed in this plan (for example, teacher-pupil ratio, itinerant teachers, traveling teachers within the building).
3. Describe how support staff efficiency will be addressed in this plan

100.014 Evaluation and Inventory of Existing Facilities

References:
2. C - 8, 10 & 22

100.0141 The evaluation of existing facilities shall include a survey of each plant in the county using the SBA approved School Facility Evaluation Instrument. This evaluation will provide objective data on the condition and components of the existing building, its appropriateness for delivery of the instructional program, and its ability to support the present and projected enrollments in an effective and efficient manner. Based on the county's goals and objectives individual facility deficiencies must be identified. This data can help determine if the facility can be economically modified to house the projected educational program and at what cost. The services of a qualified facilities planner are necessary.

100.0142 Criteria for Evaluating Existing Buildings

A. Health and safety considerations. These will be identified as required by the regulatory agencies and will be used as a criteria for determining prioritization of projects for SBA funding. Regulatory agencies include the offices of the West Virginia Fire Marshal, West Virginia Division of Health, West Virginia Division of Highways, Office of School Transportation and Facilities of the West Virginia Department of Education, SBA, etc.

B. Facilities improvements and new facilities must accommodate the educational programs by design. The building design will be dictated by the curriculum as defined in an approved Educational Specification. Existing and new facilities must meet regulations of the state Handbook on Planning School Facilities.

C. Facilities must comply with state policies, federal and state laws, and when applicable, guidelines of the SBA.

D. Economies of scale include compatibility with similar schools that have achieved the most economical organization, facility utilization and pupil-teacher ratios.

E. Economies of scale established by the SBA are as follows:

1. Elementary schools with a minimum enrollment of 300 students in grades 1-6, 200 in grades 1-4, or a minimum of 2 classes (22 each) per grade level, are recommended to achieve economies of scale. Early childhood, kindergarten and exceptional students may increase this minimum standard.
2. Middle and junior high schools with a minimum enrollment of 450 students grades 7-9, or 6-8, 5-8 schools with 600 students, or schools with 150 students per grade level minimum are recommended to achieve economies of scale at the intermediate level.
3. High schools with a minimum enrollment of 600 students grades, 10-12, 800 students 9-12 or 200 students at each grade level are recommended to achieve economies of scale.

4. Geographic or other considerations may require exceptions to be considered and a waiver of the EOS requested. Regional planning should also be considered to achieve these minimum enrollment standards.
5. A minimum of 85% of the building design capacity should be considered for early childhood, intermediate, and adolescent facilities.

F. Complete an energy efficiency study for each facility.

G. Appraise how each facility supports or fails to support the educational program.

H. Calculate the program utilization for each facility in accordance with the guidelines of the SBA for educational specifications.

I. Site analysis - Describe each school site using the criteria in Section 200 of this handbook.

100.015 Major Improvement Plan

Each county shall include in this section of the CEFP a maintenance and capital improvements plan for existing facilities in accordance with the SBA Guidelines and Procedures Handbook and WV Code 18-9D-15(d) and 18-9D-16 (b).

100.016 Translating Educational Needs into Facility Needs

In this section of the CEFP, the data collected in the community analysis, the population and enrollment study, the educational plan, the evaluation and inventory of existing facilities, inter-county facility feasibility study and the MIP will be used to make decisions that will determine the future facility needs of the county. This plan will insure that facilities are in compliance with state and local requirements.

Comprehensive planning is a way of identifying the best route to the future through a workable plan for handling priority rated, predictable situations and anticipated changes. A CEFP defines ultimate goals for the institution and accounts for the facilities required to help achieve these goals. The capacities and capabilities thus defined are realized, if necessary, through several phases of construction and expansion or reduction and modification. These activities are viewed in terms of their relationship to the total program.

A summary of the county's transition to facilities needs should be represented by these items and in this order in the plan:

A. A Building Review and Recommendations Report, compiled alphabetically by school. (SBA/WVDE 147) ✓
B. A Feeder School Summary Report (SBA/WVDE 132) ✓
C. A feeder school summary report narrative filed together alphabetically by high school attendance area
D. A High School Attendance Area Facility Report, compiled alphabetically by high school attendance area (SBA/WVDE 148) ✓
E. A countywide School Facilities Classification Report (SBA/WVDE 116) ✓

Analysis of the data compiled in the CEFP regarding enrollments, the educational program, the condition of existing facilities and the ability of each facility to support the educational program will result in the identification of specific inadequacies in each school that need to be addressed. The narratives are to describe each school facility, site, enrollments, general conditions, recommendations for future use of the building and cost estimates to implement the recommendations. Develop a list of projects at each facility needed to address the inadequacies in health and safety, building integrity or educational capability of the facility. In accordance with SBA/WVDE Form ✓147 a ten year timeline will be developed to indicate the anticipated completion of each of these project.

Upon completion of the recommendations for each individual school, a high school attendance area summary for school improvements will provide an analysis of improvements in each community. Complete SBA/WVDE Form #148. ✓

New facilities shall not be constructed for student populations that are projected to fall below 85% of the required economies of scale guidelines for minimum school enrollments within ten years of the completion date of the construction. See Chapter 1, Section 100.0142 (F). Consideration may be given to extraneous factors that may alter this requirement provided the project is approved by the state Board of Education and the SBA, if SBA funding is being requested.

100.017 Inter-County Facility Feasibility Study

A. Each county shall submit to the state Board of Education and the SBA a list of grouped, inter-county attendance areas where potential exists for cooperative utilization of a facility between or among counties. (May include multi-county and inter-regional facilities, ie., magnet school, area vocational centers, etc.)

B. A planning study is to be completed to assure that an efficient and effective instructional delivery system will be utilized addressing each of the items indicated in Chapter 1, Section 100.01 (A-J).

C. Describe the results of the study and its impact on school facility needs for students in these attendance areas.

100.018 Financing Plan

The estimated costs for implementing the improvements identified in this plan shall be utilized in the development of the finance plan.

A. Identify the source of funding to be utilized in the financing plan.
    1. Local bonding capacity and unencumbered potential
    2. Excess levy funds
    3. Federal aid funds
    4. Sale of abandoned school sites and buildings
    5. State funds (including SBA)
    6. Permanent improvement funds
    7. Performance based contracting
    8. Lease-purchase arrangement

B. Identify the fiscal obligations to be considered in the plan.

1. Outstanding Bond indebtedness
    a. Total obligation
    b. Amount encumbered annually
    c. Maturity date(s)
2. Outstanding lease purchase agreements, performance based contract or certificates of participation.
    a. Total obligation
    b. Amount encumbered annually
    c. Pay-out date(s)

C. Cost of needed improvements as determined by an architect, professional engineer, or other professional project estimator (summarize the financial needs identified in Section 100.016 of the handbook indicating the cost for each capital improvement for each facility and its anticipated funding source).

D. If a proposed project benefits more than one county in the region, include in the plan the manner in which the cost and funding of the proposed project shall be apportioned among the counties.

100.019 Synopsis of Comments from the Public Hearing(s)

Prior to submitting the CEFP to the state Board of Education and the SBA for approval, a public hearing(s) must be advertised and conducted in accordance with WV Code 59-3-1 et.al., to provide broad based community input into the plan. As an addendum to the CEFP, sufficient documentation, including verification of public notices from the local newspapers and a synopsis of all comments received during the hearing(s) and a formal comment from the local board must be included.

100.020 Objective Evaluation of Implementation

As part of the total CEFP, the county shall include the objective means to be utilized in evaluating implementation and effectiveness of the overall plan and each project included therein. The evaluation shall measure how:

A. Each project furthers each of the quality educational goals of the SBA as defined in 18-9D-16 of the WV Code. This shall include: student health and safety, economies of scale, travel time and other demographics, achievements of effective and efficient instructional delivery system, curricular improvements, innovations in education, and adequate space for projected student enrollment;

B. Prioritization of projects within the county serves as a basis for determining expenditure of available funds; and,

C. The overall success of any project relates to the facilities plan of the county and the overall goals of the State Board of Education and SBA. (Complete WVDE/SBA Form # 147)

101 EDUCATIONAL SPECIFICATIONS FOR A SPECIFIC SCHOOL CONSTRUCTION PROJECT

References:
2. E - 2, 3, & 4

101.01 The development of educational specifications for each new school facility is a team, rather than an individual activity which is accomplished by school administrative unit personnel with or without the assistance of an outside consultant. The chief school administrator, or the RESA director in cooperative projects, recommends persons for committee appointment. A representative of the SBA will be appointed to the committee if SBA funds are utilized in the project. The (school) appropriate board then acts on these recommendations. The committee chairperson is usually the principal of the proposed facility. If that official has not been identified, then the principal of another administrative unit facility can serve. The working committee should be small and selective. It should be balanced in composition, with diversified interests, knowledge, and skills represented. Members should understand their role in relation to both the immediate task and the entire project. They should also understand the necessity for cooperation. Ordinarily members of the teaching staff and others who will be immediately involved in the use of the proposed facility are most able to provide the type of information required in educational specifications. Some important considerations in the selection of committee members are:

A. Time available to spend on the project
B. Knowledge about the project
C. Imagination and creativity

D. Ability to work with people
E. Interest in the improvement of the school

101.02 Educational specifications should describe the learning activities that will be housed in the proposed facility; the number, grouping and nature of the people involved; the spatial relationship between the facility and site; the interrelationships of instructional programs with each other and with non-instructional activities; the major items of furniture and equipment to be used; and any special environmental provisions which would improve the learning environment and promote staff efficiency. Educational specifications should avoid rigid architectural prescriptions, confining its remarks to educational matters.

101.03 Educational specifications describe the educational activities which a proposed facility must support and the types of spaces which will best accommodate program requirements. They are not a precise delineation of the instructional program; nor are they technical specifications of the type that the architect or engineer directs to the contractor. They are, however, in a temporal and developmental sense, a connecting link between the program and technical statements.

The educational specifications document is a vehicle of communication between the educator and the architect. The educator identified the educational objectives and suggests general facility needs; the architect bases his facility design on this information. Copies of educational specifications for any new facility shall be submitted to the State Board of Education and the SBA for review at the time they are submitted to the architect for design consideration. The SBA educational specification guidelines must be used for all projects regardless of funding sources.

102 SELECTION OF FURNITURE AND EQUIPMENT

References:
2. J

102.01 Classroom furniture and equipment should be considered during the initial planning stage and should be selected on the basis of its contribution to, and compatibility with, the total educational program.

102.02 Criteria for selection should include the following:

A. Appearance
B. Maintenance
C. Safety
D. Comfort
E. Durability
F. Building Codes
G. Guarantees
H. Flexibility
I. Availability
J. Cost

103 OCCUPANCY OF NEW EDUCATIONAL FACILITIES

References:
2. O

103.01 Teachers and other employees shall be informed of the operation of the building, particularly fire escape routes, heating, ventilating and air conditioning systems and communication systems.

103.02 No educational facility shall be occupied without prior approval from the state Department of Education, state and county Regulatory Agencies, and School Building Authority, when appropriate.

104 FACILITIES PROGRAM CONTROL

104.01 When projects are SBA funded, SBA guidelines regarding administration and project control shall be in effect. On single county projects, the county board of education maintains control of the construction program. On new cooperative multi-county projects, a joint building council of individuals from the cooperating counties shall administer the construction project. This council shall include, but not be limited to: the respective county superintendents, one member from each Board of Education, the principal of the new facility, if known, and one classroom teacher from each county. The council shall control each project by:

A. Authorizing a study of the educational program and subsequently adopting educational policies for implementation;
B. Authorizing the survey and adopting a building program on the basis of the results thereof;

C. Establishing site criteria, inaugurating steps to select and purchase sites and authorizing the purchase of sites;
D. Authorizing the preparation of and approving educational specifications for each building;
E. Selecting the architect, educational consultant, legal advisor and other specialists;
F. Authorizing the preparation of architectural drawings and specifications, approval of preliminary plans, working drawings and specifications and any subsequent change;
G. Deciding when to proceed with construction, soliciting bids, awarding contracts and inspecting and accepting the completed building;
H. Authorizing the expenditure of necessary funds at each stage of the program;
I. Designating one county as the fiscal agent to handle the business functions of the building council on inter-county projects.

105 RULES AND REGULATIONS FOR COUNTY BOARDS OF EDUCATION TO FOLLOW REGARDING SCHOOL CLOSINGS OR CONSOLIDATIONS

Section 13a of Article 5, Chapter 18, of the Code of West Virginia provides that:

. . .the state board shall promulgate rules and regulations which shall prescribe in detail the type of supporting data a county board of education shall include as part of its written statement of reasons required by this section for school closing or consolidation, and which shall include any data required by the state board of education to amend a county's comprehensive educational facilities plan.

Pursuant to this statute, all county boards of education, except in cases in which a construction bond issue was passed by the voters and which bond issue included the schools to be closed or consolidated and included in an approved CEFP, must prepare and reduce to writing reasons and supporting data concerning proposed school closings or consolidations to be submitted to the state board of education for approval in accordance with State Board Education Policy 6200 and the West Virginia Code.

105.01 Enrollment

A. Population changes - trends in population growth or decline in the county, the attendance area of the school targeted for closure or consolidation and the school or schools which will receive the students affected

B. Population characteristics, such as birth rates and age composition (including the number of pre-school and school-age children)
C. Maps showing growth or shifts in distribution of population within the county and affected schools
D. Projections of enrollment, by grade in respective attendance area, for the next ten years
E. Explanation of the projection method utilized

105.02 Facilities

A. Maps showing the schools, by grade configuration and student enrollment, targeted for closure or consolidation and the schools that will receive the students.
B. Physical appraisal of the school targeted for closure or consolidation and the school or schools which will receive the students. This appraisal should include age, number of buildings, general condition, adequacy related to structural, electrical and mechanical systems to provide a safe and healthful environment. Refer to SBA facility evaluation form.
C. Evaluation of the school targeted for closure or consolidation and the school or schools which will receive the students in regard to their adaptability to the present and proposed educational programs and the provisions of related services.
D. Measure of the utilization of the school targeted for consolidation or closure and the school which will receive the students in regard to the following:
    1. What is the operating capacity of each facility?
    2. What is the utilization factor of each school?
    3. What will be the effect of this proposed school closure or consolidation as to utilization and operating capacity?
    4. What is the projected enrollment of receiving schools?
E. Comparison of the accessibility (barrier-free environment) for the handicapped of the school targeted for closure or consolidation and the school or schools which will receive the students.
F. Elaboration of the effect the proposed school closing or consolidation will have on the school system's future plans regarding grade configuration, educational programs and facility requirements.

105.03 Finance

A. Itemization of the anticipated cost or savings the county will experience in all areas as a result of the proposed school closure or consolidation

B. Cost of any renovation or addition resulting from the proposed school closure or consolidation

105.04 Personnel

An analysis of the effect the proposed school closure or consolidation will have on professional and service personnel

105.05 Transportation

An analysis of the effect the proposed school closure or consolidation will have on the county pupil transportation system, including present and proposed transportation time of the affected students (Reference 202.02)

105.06 Educational Program

Complete a projected educational program improvement analysis which includes a statement of assurance that the following have been considered:

A. 2510 - Assuring the Quality of Education: Regulations for General, Vocational and Special Educational Programs

B. The Criteria of Excellence

C. Policy 6200 - Handbook on Planning School Facilities

105.07 Pursuant to West Virginia Code 18-5-13 and 18-5-13a, county boards of education must do the following by the first Monday in April:

A. Shall hold a public hearing, notice of which shall be advertised by publication in a newspaper in general circulation in the locality of the affected school at least once per week for four successive weeks prior to the date of hearing. The notice shall contain:
   1. Time and place of the hearing
   2. Proposed action of the board of education

B. Must have written reasons and supporting data regarding the proposed school closings and consolidations in the office of the county superintendent during the four consecutive weeks prior to the public hearing.

C. Copies of the notice of public hearing must also be posted in all schools in the county in conspicuous working places for all professional and service personnel to observe and shall remain posted for four successive weeks.

D. At least a quorum of the school board members and the county superintendent from the county wherein the affected school is located shall attend and be present at the public hearing.

E. During the public hearing, members of the public shall have the right to be present, submit statements and testimony in their behalf and question county school officials.

F. After provisions A through E above have been completed, county boards of education must take a formal vote on the school closure or consolidation issue.

105.08 Once the statutory provisions have been compiled with, and prior to implementation of any school closure or consolidations, the county's CEFP must be amended. The county must file this amendment with the state Board of Education for its approval and this amendment must:

A. Be signed by the county superintendent and give the date the action was taken by the local board.

B. Contain assurances that applicable sections of the West Virginia Code 18-5-13, (3), (4), (5), 18-5-13a, and Policy 6200 have been addressed.

C. Contain justification for the proposed consolidation or school closing. This justification must be supported by supplemental data and information pertinent to the following subjects: enrollment, facilities, finance, personnel, transportation and educational programs, as described above.

D. Contain documentation of all hearings, motions and other actions concerning the proposed school closings and consolidations.

105.09 Emergency School Closure Consideration

Should the need for an emergency school closure exit, West Virginia Code 18-5-13, Section 4, provides that the State Superintendent of Schools may make such a declaration. However, this would not waive the statutory requirements of 18-5-13a.

In order to merit consideration for emergency status by the State Superintendent, the following assurances must be met:

A. Educational program - educational opportunities are equal to or greater for students at the receiving school

B. Transportation - proposed routing schedule does not result in undue time in transit for students according to recommended age appropriate travel times

C. Exceptional students - programmatic offerings and educational spaces are appropriately accessible to handicapped students

D. Health/safety - transfer of students would not result in any health/safety concerns which would adversely affect students and staff

E. Capacity - receiving school has the capacity to adequately house projected enrollment

Chapter 2

SCHOOL SITE PLANNING

200 SCHOOL SITE

All school sites provide sufficient space for the school building, future expansion, educational program activities and support facilities.

References:
6. American National Standards Institute A - 117.1 - 1980
7. National Flood Insurance Program

201 SELECTION

201.01 Intelligent and imaginative school site selection and development are significant aspects of educational facility planning. Because the design and use of the land on which a school is built is fully as important as the design and use of the facility itself, the site's potential as an educational and community resource must be considered.

201.02 The selection of a site requires the cooperative effort of the Board, school staff, planning committee, architect and legal consultants. Since the educational program is of primary concern to the community, consideration should be given to lay membership on a site selection team.

201.03 Resources to be utilized when selecting sites may include: land-use maps, aerial photographs, soil maps, topographic maps, highway maps, flood control maps, neighborhood or school service area maps, pre-school and pupil spot maps, dwelling unit maps, utility service plans and realtors and developers intentions.

201.04 Factors to be considered in selecting a site may include: number and grade level of students, nature of educational program, initial cost, development cost, transportation systems, availability of activities, provision for a safe and healthful environment and the protection of the investment in the building.

202 LOCATION

202.01 School sites shall be located in proper relationship with existing and proposed physical facilities in the community, including: student population centers, parks, recreation centers, libraries, health centers, streets, highways, residential housing and other schools.

202.02 The following one-way bus transportation time levels are considered the reasonable guidelines for pupils transported to school:

A. Early childhood levels - thirty minutes
B. Middle childhood/junior high levels - forty-five minutes
C. Adolescent/high school education levels - sixty minutes
D. These guidelines apply as follows:
    1. To normal weather and operating conditions
    2. Provided there is an appropriate school within the designated travel time - Counties may meet this need cooperatively
    3. To abide by West Virginia Board of Education Resolution, of March 9, 1990 (See Appendices)

202.03 For the safety of students, the site shall be located away from hazards and undesirable environments, such as:

A. Railroads, arterial highways, heavily traveled streets, traffic and congestion
B. Noise, toxic gas escapes from railroads, airports and odoriferous plants or industries
C. Natural barriers limiting accessibility and expansibility, such as rivers, lakes, swamps and protruding ridges
D. High voltage transmission lines, booster or reduction stations, high pressure gas lines and transformer stations
E. Taverns, fire stations, bulk storage plants for flammable liquid and property zoned as industrial
F. Situations where a combination of factors such as those presented above could contribute to the possibility of human entrapment

NOTE: Building sites must be located above the 100 year flood plain as determined by the U.S. Corp of Engineers and the National Flood Insurance Program.

202.04 Public service facilities which must be available for a school site include: water, gas, telephone, electricity, sewage disposal, fire protection and transportation.

203 SIZE

203.01 The size of any school should provide sufficient and appropriate space for all of the in-school and evening activities.

203.02 With the assistance of an architect, trial layouts of the area required for a site should be made and include, but not necessarily be limited to, the following items:

A. The school building
B. Reserve for expansion of building
C. Set back from streets, sidewalks, approaches and driveways
D. Parking areas, access and buffer
E. Bicycle entrances and storage racks, with proper buffer areas
F. Landscaping and buffer areas at the side and back of the site
G. Paved game areas, including space for outdoor basketball and tennis courts
H. Field game areas for physical education and recreation
I. Areas for interscholastic athletics (which may overlap with field game areas)
J. Possible athletic stadium with parking area, access and buffer
K. Outdoor area (educational) for nature study, biology, art
L. Possible driver instruction areas (auto)
M. Outdoor area adjacent to shops
N. Unassigned areas held in reserve for future use

203.03 School sites of the following minimum sizes shall be provided:

A. Early Childhood/Primary Education Program (K-4)
5 usable acres + 1 additional acre for every 100 pupils over 240 students
B. Middle Childhood/Junior High Education Program (5-8)
11 usable acres + 1 additional acre for every 100 pupils over 600 students
C. Adolescent/High School Education (9-12)
15 usable acres + 1 additional acre for every 100 pupils over 800 students
D. Area Vocational Schools
10-40 acres

NOTE: If sewage treatment plants and retention pools are required, acreage would have to be increased.

203.04 Site acreage are national norms and apply to traditional suburban schools. Where the nature of the neighborhood is urban, the school site shall also be urban in scale. Where the terrain limits the land available, this factor shall be considered. One remedial measure would be to locate schools adjacent to parks or recreation facilities. However, all sites not meeting the minimum standards must be approved by the West Virginia Board of Education.

203.05 For modern schools, a portion of the site should be set aside to meet needs that are bound to arise in the future. Many schools constructed in the past have become obsolete because they lacked sufficient size to warrant economical rehabilitation or enlargement. Buying an adequate site is insurance against such educational obsolescence.

204 PHYSICAL FEATURES

204.01 Ordinarily, a school site should not enhance the cost of construction and should permit the architect to place the building in an appropriate place in relation to other facilities to be developed on the site. The services of an architect, other related specialists and consultants from the School Planning Office of the State Department of Education or the SBA, when appropriate, are necessary to judge a site on this criterion.

204.02 A natural elevation with satisfactory approaches avoiding long or difficult climbs makes a desirable setting. The site should be free from drainage from contiguous land and should permit proper drainage throughout at a reasonable cost. Rapid drainage and quick drying should characterize the parts of the site which are expected to serve as recreational and physical education areas. The soil, preferably a sandy loam, should be fertile enough to produce good lawns and vigorous landscaping growth.

204.03 There are many site factors which affect cost apart from the purchase price of the land. The following conditions are to be determined in advance and considered along with the purchase price.

A. The need for extensive hauling of dirt due to a surplus or shortage on the site

B. The presence of quicksand, deep mines, unsatisfactory fill, pyrites or other undesirable subsoil conditions which require special footings or pilings to support the building

C. The presence of rock or other conditions affecting the cost of necessary excavation or ditches
D. The need for the removal of obstructions, such as large boulders or trees; the need for fillings or capping of old wells, clay holes, pits or mines
E. An unduly expensive drainage need
F. The need for constructing and maintaining long access drives and special installations due to distance from service utilities

204.04 Approval will not be granted for construction of a facility on a site lacking municipal water, adequate fire protection and sewage services without the approval of local or state health agencies. No water supply can be considered acceptable unless it provides an ample quantity of safe and potable water for the school.

204.05 Local or state health agencies will also provide information regarding the required type and location of a sewage disposal system.

204.06 The subsoil of a site must provide good drainage and a proper base for economical and substantial foundations for the building. Neither purchase of a site by the county board of education nor building design shall be initiated until the subsoil conditions have been determined acceptable for the entire area of the building by adequate test borings or core drilling made under the direction of an experienced soils engineer. Soil tests are particularly important for schools that require extensive grading. Underground investigation shall also include the ownership and presence of mineral rights, mines and wells and the effect they have on the site development. The recommendation is made that mineral rights be controlled for long term protection of surface usage.

204.07 Some adverse site conditions can be overcome by modern construction methods, but they should be accepted only when the costs of such improvements are reasonable. Many of these conditions are not readily seen at the surface. Before the land is purchased, test borings should be made to accurately determine subsoil conditions and the results should be analyzed and interpreted for the board by a competent soils engineer.

NOTE: Boards of education and county superintendents may secure soil information from the United States

Department of Agriculture, Soil Conservation Service, Morgantown, West Virginia. This service is provided without cost and could save thousands of dollars by assisting in properly locating schools. Soils are rated by various information, the contracting organization can require certain specifications that prevent problems due to soil limitations.

204.08 Sites should be of such shape and contour as to yield reasonable space for the setting of the building and for drives, walks, play and athletic fields. The contour for a site is a slightly convex surface with the high point at the position of the building. This situation is rarely, if every found and some reshaping and grading will be necessary on almost every site.

204.09 Cost for excavating and foundation walls can be reduced by fitting the building to the contours of the land. Extra expense for special footings and special drainage can be eliminated by placing the building on high ground and where subsoil conditions are known to be favorable. Proper placement of the building will reduce the length of utility and drainage lines, drives and walks, thus reducing costs.

205 RECREATIONAL AREAS

All schools housing early childhood education programs contain an adequate blacktopped play area and a field game area large enough to accommodate physical education activities. All centers housing kindergarten programs contain a segregated blacktopped area and a large grassy area with climbing equipment and swings. The playground may be segregated by either time or space allocation. All middle, junior high and high school sites contain a blacktopped play area with a minimum size of four thousand, eight hundred square feet and a field game area, space and/or facilities large enough to accommodate physical education activities such as soccer, touch football, softball, tennis and track.

NOTE: Dimension given refers to actual field or court dimension; additional space should be provided for spectators.

FIELD AND COUNTY DIMENSIONS

School

Early Childhood/ Middle Childhood/ Adolescent/

Activity	Primary	Junior High	High School
Baseball			350' x 350'
Basketball	40' x 60'	50' x 84'	50' x 94'
Football & Track (1)			300' x 600'
Football, Six man			120' x 300'
Football, Touch		120' x 300'	160' x 360'
Hockey, Field			180' x 300'
Hockey, Ice			85' x 200'
Softball (2)	150' x 150'	200' x 200'	250' x 250'
Soccer			165' x 300'
Swimming			60' x 100'
Volleyball	25' x 50'	25' x 50'	30' x 60'
Archery		50' x 150'	50' x 300'
Badminton			20' x 44'
Handball	18' x 26'	18' x 26'	20' x 40'
Horseshoes		10' x 40'	10' x 50'
Shuffleboard			6' x 52'
Tennis		36' x 78'	36' x 78'
Tennis, Deck			18' x 40'
Tennis, Paddle			20' x 44'
Tetherball	10' circle	12' circle	12' circle

(1) Assumes Metric Track
(2) Varies according to ball size

206 WALKS, DRIVES AND PARKING

All walks, drives and parking areas are paved. Parking space is adequate to accommodate school visitors, employees, pupils who must drive, school buses, and school activities. Parking space is provided for the handicapped, and the site is accessible to the handicapped. The bus loading zone is designed to accommodate safely all buses anticipated at one time and is separated from all traffic using school parking and driveway areas. The exterior area is appropriately lighted.

206.01 Walks should be direct, convenient and natural to encourage people to stay on them. They should connect the building with streets or highways, the bus loading zone, parking areas and auxiliary school facilities. Limiting points of access is desirable for control of traffic. Main walks, such as loading areas, and main entrances should be constructed with initial building program.

Additional walks should be constructed after traffic patterns have been established.

206.02 Walks should be paved in lanes at least 22 inches (24 inches desirable) wide, with a minimum of three lanes for a total width of at least 66 inches (72 inches desirable).

206.03 Walks should be far enough from building to permit ample space for shrubbery, crowned or sloped high enough for proper drainage and illuminated for night use. Wide paved areas at entrances will help keep the building clean by catching dirt from shoes and overshoes before it gets inside; and a good slope will make this area easier to keep clean. They shall have a gradient of not more than five percent. Walks should be of a continuing common surface where practical and should not be interrupted by steps or abrupt changes in level. Walks, driveways or parking lots should blend to a common level.

206.04 Safety is a primary consideration in locating vehicular circulation on the school site. Secondary considerations are economy, convenience and directness. Driveways should be:

A. One way with clear views. Two lanes should be provided to main loading entrance and parking areas.

B. Hard surfaced, properly drained and illuminated for night use.

C. Planned to provide access and control traffic to loading areas and building service entrances. Wherever practical, driveways for buses should be separate.

D. Located so as not to connect to a heavily traveled highway if a lightly traveled street is accessible. Points of access to the site should be limited.

E. Of adequate space to insure that carbon monoxide does not accumulate in idling vehicles or school buses.

F. Every educational facility not readily accessible from public roads shall be provided with suitable gates, access roads and fire lanes so that all buildings are accessible to fire apparatus. Fire lanes shall be at least 20 feet in width, with the road edge closest to the building at least 10 feet from the buildings. Any dead end road shall be provided with a turn-around at the closed end at least 90 feet in diameter.

206.05 Parking needs of the following should be met:

A. Teachers, pupils and other school employees

B. Parents, school visitors and salesmen
C. Spectator groups attending school or public activities
D. The handicapped

206.06 Parking spaces can be provided at the rate of about 125 cars per acre. The following quantities are suggested as reasonable:

A. For staff and incidental school time parking: 2 parking spaces per teaching station.
B. For pupils: A survey should be conducted for pupil parking needs at the adolescent/high school level and space provided as necessary.
C. For spectators:
    1. Rural areas - One parking space per 3 seats for spectators
    2. Urban areas - One parking space for each 6 to 8 seats, or to suit local codes and conditions.

206.07 Consideration should be given to the following parking arrangements:

A. Car parking should be arranged to minimize backing. Parking areas should be hard surfaced, well drained and illuminated for night use. Traffic control signs are necessary.
B. Car parking should not be permitted on streets with street traffic, on pedestrian lanes, or on driveways or loading areas. It should be away from playgrounds but near spectator areas when practical.
C. Parking for wheelchair and other handicapped persons must be provided near entrances, if possible.

206.08 A designated bus loading zone should be provided to accommodate all buses anticipated at one time. This should be based on:

A. A transportation survey covering bus schedules, partial unloading or transfer of pupils, provision for handicapped children and parking.
B. Number of pupils transported, based on the average number of pupils per bus or rated capacity of the bus.
C. Future growth or possible changes in the transportation pattern.

206.09 The bus parking area should be designed in connection with the bus loading zone, independent of driveways, so that backing the vehicle is unnecessary. It should be permanently surfaced and well drained, with designated spaces and traffic control signs.

206.10 Bicycle racks near the building are desirable for some schools. A survey to determine the need should indicate the rack space necessary.

207 FIRE PROTECTION

207.01 All school facilities shall have, whenever economically feasible, fire hydrants at recommended locations to achieve the best fire insurance assessment. Coordinate the type of hydrant required with the local fire department.

208 SAFETY AND CLEANLINESS

208.01 All school buildings and grounds shall be kept clean and free from debris. All school buildings, grounds, and equipment are free from safety hazards.

209 BEAUTIFICATION

209.01 The site should lend itself readily to landscaping and provide a pleasant natural environment. It should permit the location of the building an adequate distance from the street line, both for aesthetic setting and for the safety of children.

209.02 The site plan presented by the architect should encompass the total site and show future developments. The same general procedures used for planning the building are appropriate for outdoor facilities. The process of educational planning, writing educational specifications and architectural designing are as applicable to sites as to buildings.

209.03 Well planned site plantings for individual schools should be prepared with the assistance of qualified personnel, such as landscape architects and nurserymen. (There are personnel at West Virginia University and the U.S. Soil Conservation Service who will assist in planning for site beautification).

209.04 No school site plan should be considered adequate without an accompanying planting plan. The site design should consider the harmonious visual integration of the varied plantings with the mass of buildings from all points of view.

209.05 The classes of plants usually used on school grounds are: shade trees, evergreens, evergreen shrubs, deciduous flowering shrubs and ground covers such as grasses. In general, a school ground planting scheme will consist of foundation planting, intersection planting of shrubs at angles and curves of drives and walks, tall trees to frame the building and trees planted in groves for shade.

209.06 The choice of plants should be limited to the following varieties:

A. Require minimum maintenance
B. Known to be sturdy
C. Thrive in recreational areas
D. Tolerate normal amounts of dry weather

209.07 Save all usable existing topsoil on the site. It can be replaced only at great expense. An analysis of the topsoil should be made to determine plant food requirements for the plantings provided.

209.08 Retain and protect as many existing trees as it is possible to absorb in the total plan. If all the planting cannot be done at once, plant shade or larger trees first. Locate trees in relation to the building so as to shield classrooms from brightness of the sky, reflected snow glare and glare from adjacent buildings and to provide shade.

209.09 Each school site should have a master plan for plantings approved by the Board of Education. Plantings provided by citizens and/or pupils should be in accordance with the approved plan and should be sanctioned by the Board of Education prior to the expenditure of money for such plantings.

Chapter 3

COMMON FACILITIES

300 FACILITIES NECESSARY FOR THE OPERATION OF ALL SCHOOLS

All schools contain the instructional and auxiliary facilities which are necessary to maintain the educational program and accommodate the out-of-classroom needs of both students and staff. The design possibilities for such spaces have increased with the emergence of diverse concepts in school design, increased use of non-printed media, expanded awareness of student/teacher human needs, recognition of the school as a community resource and improved technology. The planning of auxiliary spaces must involve careful consideration of the future adequacy of the spaces for while additional classrooms can be appended with some ease, the expansion of auxiliary spaces can seldom be accomplished easily after completion of initial construction. Thus, when auxiliary facilities become obsolete and inefficient, the usefulness of the entire facility may be diminished.

In the planning and design of new school facilities, designers should always strive to attain maximum efficiencies by looking at multi-use spaces and shared facilities in both the instructional and auxiliary areas.

301 ADMINISTRATIVE AND SERVICE FACILITIES

References:
  2. H - 9 & 10

All schools provide the administrative offices necessary for the operation of the school. The school contains a guidance area designed and located to allow privacy, with an entrance separate from the administrative suite. The guidance office is of adequate size to allow for group discussions and is convenient to student records. The guidance office contains adequate secured storage facilities, outside telephone service and an information display area. The school also contains a health service area which includes an examination room, toilet facilities and an area for the ill. The health area is equipped to facilitate the operation of its users and contains outside telephone service. Appropriately equipped areas within the administrative suite are available for supplies and book storage, duplicating and/or other activities, conferences and/or small group discussions, staff lounge and student and teacher toilets. A control room, within or adjacent to the administrative suite, is provided to house the communication and fire alarm systems. Factors influencing the location of administrative facilities include: Proximity to the main entrance of the school, convenient access to the instructional areas of the building, insulation from outside noises and convenient access to the special service facilities. These facilities may be used during the summer months; therefore, air-conditioning should be considered.

301.01 General Office and Reception/Waiting Area

301.011 Size

Dependent upon initial enrollment, type of school and ultimate enrollment of the school; 200 to 800 square feet will likely be needed for secretarial and reception areas.

301.012 Location

A. At the hub of the administrative suite
B. Direct access to a building corridor and to work room
C. Direct or convenient access to offices of the principal and assistant principal and other rooms in the administrative suite
D. Location should provide convenient access to the special service facilities
E. Near main entrance to facility

301.013 Activities

Reception of school visitors, pupils and staff, general secretarial activities required in the operation of the school.

301.014 Equipment Space and Facilities

A. Counter separating reception-waiting room or area from the secretarial work area
B. Comfortable chairs in reception area
C. Small table for magazines and other literature
D. Display space and bulletin board
E. Mail boxes for faculty members, located for easy access without interference with main office traffic
F. Secretarial furniture
G. Fire-safe record file or vault
H. Master telephone station or other communication to all locations in the administrative and special service areas
I. Carpeting or resilient floor covering

301.02 Principal's Office

301.021 Size - 125 to 200 Square Feet

301.022 Location
A. Direct or convenient access to general office
B. Convenient access to the corridor without going through the general office
C. Convenient access to other areas in the administrative suite

301.023 Activities
Planning, research and administrative activities conducted individually or in small groups.

301.024 Equipment Space and Facilities
A. Room design should permit the principal to confer without being overheard in adjacent areas
B. Conference desk and chair
C. Work table convenient to desk for layout work
D. Conference chairs
E. Bookshelving - ten to 15 linear feet
F. Storage for personal belongings
G. Telephone service and intercom to secretary in general office

301.03 Assistant Principal's Office - Optional
Depending upon enrollment.

301.031 Size - 125 to 200 square feet

301.032 Location
Convenient access to general office and principal's office

301.033 Activities
Planning, research and administrative activities conducted individually or in small groups.

301.034 Equipment Space and Facilities
A. Room design should permit the assistant principal to confer without being overheard in adjacent areas
B. Conference desk and chair
C. Work table convenient to desk for layout work
D. Conference chairs
E. Bookshelving: Ten to 15 linear feet

F. Storage for personal belongings
G. Telephone service and intercom to secretary in general office

301.04 General Office - Teacher's Work Room

301.041 Size - 150 to 250 square feet

301.042 Location
Direct access to the general office and waiting room

301.043 Activities
Preparation of testing materials, reports and layouts of instructional materials by both secretarial and teaching personnel

301.044 Equipment Space and Facilities
A. Combination of open shelving and closed cabinets for storage of a variety of supplies and equipment
B. Duplicating machine
C. Typewriters
D. Calculator
E. Work table or counter
F. Lavatory
G. Microcomputer work station
H. Forced ventilation

301.05 Teacher Planning Space - Optional

Teacher planning spaces are provided to increase classroom space utilization and to provide space for individual and team planning. The incorporation of teacher planning spaces should reduce the number of classrooms required.

301.051 Size - 50 to 75 square feet per planning area

301.052 Location
Convenient access to the instructional spaces for departmentalized program offerings

301.053 Activities
Planning and maintaining of records for teachers. Individualized or shared study/work space.

301.054 Equipment
- A. Desk - 1
- B. Lockable filing cabinets - 2
- C. Lockable personal storage units
- D. Other equipment as selected

301.06 Supply and Book Storage Room

301.061 Size - 100 to 400 square feet

301.062 Location
- A. Convenient access to the general office
- B. Direct opening to corridor to permit distribution of books and supplies

301.063 Activities

Storage and distribution of instructional materials and supplies, including books, paper, notebooks, erasers and pencils

301.064 Equipment Space and Facilities
- A. Cabinets and shelving for books and other school supplies and materials
- B. Desk and chair
- C. Work counter or table space
- D. Filing space
- E. Small wall safe for temporary storage of small sums of money and other valuables (optional)

301.07 Record Vault - Optional

NOTE: Vault may be eliminated by providing fire-resistant filing cabinets in the general office or other storage area

301.071 Size - 50 to 75 square feet

301.072 Location

Direct or convenient access from the general office and to guidance and health areas.

301.073 Activities

Storage of current and inactive pupil records.

301.074 Equipment Space and Facilities
- A. General construction should be fire-resistant
- B. Cart storage units are preferable for current pupil records

301.08 Conference Room

301.081 Size - 150 to 300 square feet

301.082 Location
- A. Convenient access to general office, principal's office, counselors' offices and the public-address system control room
- B. Design and location should permit groups to confer without being overheard in adjacent rooms

301.083 Activities
Conference room will be used for conferences involving 5 to 12 people and for program broadcasts to instructional areas.

301.084 Equipment Space and Facilities
- A. Conference table and chairs
- B. Chalkboard - 6 to 8 linear feet
- C. Bulletin board - 4 to 6 linear feet
- D. Glazed panel between conference area and public address system control room
- E. Forced ventilation

301.09 Public Address System Control Room

301.091 Size - 50 to 75 square feet

301.092 Location
- A. Adjacent to conference room
- B. Convenient access to general office and principal's office

301.093 Activities
Distribution of information and educational programs within the school.

301.094 Equipment Space and Facilities
- A. Common partition between this room and the conference room should be glazed. Equip with

draperies for isolation of conference room when used for other purposes.

B. Adequate sound and electrical outlets in conferences and control room

C. Public address control system panel with orientation toward conference rooms

D. Storage facilities for audio supplies and equipment such as records, tape recordings, sound effects, microphone stands and similar equipment

NOTE: The following facilities should be closely related to the administrative facilities for internal communication purposes, such as sharing pupil records and using conference room facilities; however, separate entrances and waiting areas may be provided.

301.10 Counselors' Office

301.101 Size - 100 to 125 square feet per counselor

301.102 Location

A. Direct access from reception area and convenient access to conference room and general office in the administrative suite

B. Design and location should permit conferences without voices being overheard in the adjacent areas

C. Easy access to student records

301.103 Activities

Individual and group guidance, counseling and conferences with pupils, parents and teachers.

301.104 Equipment Space and Facilities

A. Desk and chair

B. Conference chairs

C. Shelving - 10 to 15 linear feet

D. Bulletin board - 4 to 6 linear feet

E. Storage for personal belongings

F. Telephone communications with general office and intercom to secretary; require private telephone line or lines to the counselor's office

G. One four drawer file cabinet with lock for each counselor

NOTE: Separate waiting and storage rooms are desirable.

301.105 Professional Support Staff
See Chapter 7, Section 715

301.11 Health Service Unit

301.111 Size
250 to 400 square feet. At least 20 linear feet in one dimension for vision screen.

301.112 Location
Direct access from waiting area and from building corridor to permit traffic to pass through the area for various screening tests. Adjacent to general office for access to student records.

301.113 Activities
Examinations by nurses, doctors, dental hygienists, administration of first aid and conferences with students, parents and teachers.

301.114 Equipment Space and Facilities

A. Small room or curtained area with cots for each sex, to permit rest and isolation in case of illness
B. Bulletin board
C. Toilet, lavatory and water closet conforming to requirements for the physically handicapped
D. Scales, medicine chest, refrigerator with locked storage area, mirror, clock and first aid kit
E. Storage for bed linens
F. Storage closet for nurses' personal belongings (locked)
G. Work counter with sink
H. Locked file cabinet
I. Desk and chair
J. Conference chairs
K. Locked medication box

301.12 Reception Room - For Larger Facilities

301.121 Size - 100 to 150 square feet

301.122 Location
Direct access to counselor offices, health unit and professional support staff

301.123 Activities
Reception of and browsing by pupils and parents

301.124 Equipment Space and Facilities
A. Secretarial desk and chair
B. Typewriter and stand
C. Comfortable chairs
D. Shelving for books, magazines, and variety of occupational information and college bulletins
E. Filing cabinet for occupational information not displayed on racks
F. Telephone to general office and outside

301.13 Teachers' Lounge

301.131 Size - According to Faculty Number

301.132 Location
A. Direct access from a building corridor
B. Location avoiding major pupil traffic, yet reasonably close to the administrative area
C. Toilets should not have direct opening into the lounge area

301.133 Equipment Space and Facilities
A. Comfortable lounge furniture
B. Kitchenette to prepare light refreshments (optional)
C. Adequate ventilation
D. Toilets - facilities must conform to USA Standard Specifications or similar provisions as stated in Chapter 18, Article 10F of the Code of West Virginia for making buildings accessible to and usable by the physically handicapped.

302 FOOD SERVICE FACILITIES

References:
2. H - 5 & 6

All schools contain a food service area which provides for receiving, storage, cooking, serving, dining and dishwashing. Space for lockers, toilet facilities, and an office is provided. The facility is designed to promote cleanliness and easy maintenance. The dining area is separated from the food serving and preparation areas and provides space sufficient to allow for the student body to be fed within a 90 minute time period or to seat one-third of the student body in elementary schools and three-eighths of the student body in middle and adolescent/high schools. Areas is to be located convenient to service drive for deliveries or removal of wastes. Food preparation at a central or satellite kitchen and delivery to each school is an acceptable alternative; however, if this method is utilized, warming and serving facilities must be provided at each school.

302.01 Dining Rooms

302.011 Size
Base preliminary determination of allotment on 12 to 15 square feet per student seated at any one time. Provisions for subdividing large areas should be considered.

302.012 Location
A. First floor location
B. Adjacent to kitchen
C. Direct access from the building corridor
D. Maximum utilization of natural beauty in the vicinity
E. Complete separation from both food preparation and serving areas

301.013 Equipment Space and Facilities
A. Drinking water facility accessible to students
B. Seating suitable for dining and study purposes
C. Chalkboard - 8 to 10 linear feet
D. Bulleting board - 4 linear feet
E. Glazed panel between this area and the dining room to permit ease of supervision; should be equipped with draperies to permit isolation when supervision is not necessary

302.02 Teachers' Dining and Student Conference Room (optional)

302.021 Size - 250 to 350 square feet

302.022 Location
Convenient access to serving area, building corridor and

general dining area

302.023 Activities

Dining and meetings of teachers and staff members; committee work by pupils.

302.03 Kitchen

302.031 Size

Dependent upon number of meals served during the school day, approximately 2 square feet per meal served, a minimum of 500 square feet. 25 to 30 percent of total foods area should be used for kitchen. The actual size of the kitchen should be based on food service equipment layout and delivery model being used. Excess floor area should be avoided to allow for quick and easy access to all equipment without excessive travel by cooks.

302.032 Location

A. Easy access to pupils in the serving line
B. Direct access from the outside of building for delivery of supplies and equipment and disposal of wastes
C. To facilitate the serving of large community gatherings in this space or in the physical education area

302.033 Equipment Space and Facilities

A. Small bulletin board near entrance and adjacent to serving line to promote quick and efficient service
B. Floor covering qualities: utility, durability and resiliency. Floors should be impervious to moisture, grease and food stains. They should be non-slippery and resistant to scratches, acid, alkali or organic solvents. Maintenance and upkeep relatively low. Install drains.
C. Wall and ceiling surfaces should be readily maintained and not affected by steam or heat. Tile wainscot at least 5 feet high. Sound absorbent material for ceilings.
D. Adequate ventilation is essential for workers and to reduce food odor penetrations into dining area.
E. Adequate built-in and movable equipment for efficient, sanitary preparation and serving of food.

Where possible, equipment should be movable for efficiency and ease of cleaning walls and floors. Select equipment for its use and specific needs.

F. All kitchen equipment and facilities shall comply with state regulatory agency requirements.

302.04 Food Storage

302.041 Size

Minimum of ½ square foot per meal served; 1½ to 2 cubic feet per meal served for small operation; and 1 cubic foot for long time storage such as walk-in cooler. Include dry storage area.

302.042 Location

A. Immediate access to receiving area
B. Convenient access to food preparation area

302.043 Equipment Space and Facilities

A. Areas must be dry, cool and insect and rodent proof throughout; therefore, heating pipes, water heaters and compressors should not be located in this area.
B. Adequate ventilation from outdoors
C. Adequate shelving - limit height to 7 feet 6 inches
D. Storage at floor level for large sacks of commodities on portable platforms or in covered containers on dollies

302.05 Non-Food Storage

302.051 Size - 40 to 60 square feet

302.052 Location

Immediate access from food preparation and storage area

302.053 Function

Provide storage of soaps, detergents, wetting agents and other cleaning supplies and equipment required in the daily operation and maintenance of the food service center. A separate, locked cabinet for insecticides, rodenticides and other toxic compounds should be available.

302.054 Equipment Space and Facilities

Service sink, washer, dryer and variety of shelving.

302.06 Locker/Dressing Room

302.061 Size - 75 to 100 square feet

302.062 Location -
Lavatory in kitchen for hand washing in food preparation room

302.063 Equipment Space and Facilities
A. Lockers - full length
B. Mirror
C. Chairs or benches - 2 or 3
D. Toilet

302.07 Serving Area

302.071 Size
Dependent upon the number of meals to be served at any one time and method of serving. Use 200 square feet for preliminary planning. For floor covering qualities, see Chapter 3, Section 302.033 (B).

302.08 Dishwashing Area

302.081 Size
Dependent upon method of cleaning and sanitizing dishes and number of meals served. Use 200 square feet for preliminary planning. For floor covering qualities, see Chapter 3, Section 302.33 (B).

302.09 Head Cook Office - (optional)

302.091 Size
Approximately 75 square feet

302.092 Location
Must be located near receiving area for visualized access to and from kitchen area

302.093 Equipment Space and Facilities
A. Desk

B. Two drawer file cabinet
C. Chairs - 2 - 3
D. Bulletin board

302.10 Receiving/Maintenance Area

302.101 Size
Provide approximately 75 square feet for can wash and waste holding. Provide exterior concrete pad with easy access if a dumpster unit is used.

303 LIBRARY/LEARNING RESOURCE OR MEDIA CENTER

References:
2. G - 26

All schools contain a center which is located, designed and equipped to facilitate the instructional program. This center is a space for the organization, storage, lending and on-site use of learning aids for all school educational programs. It should house not only conventional library materials, (books, newspapers, periodicals, and pamphlets), but also recordings, tapes, filmstrips, slides and microfilm, as well as equipment necessary for their use. The center should be comfortable and attractive. The environment should be pleasant, and the space should be organized to permit quiet, solitary study; group interaction, easy location, inspection and use of materials, and convenient flow of traffic between areas. The success of the center will depend, to a large degree, on the organization of space and materials, the furniture and the manner in which the center is operated. The center should be centrally located to insure easy access. A main floor location is usually preferable. The center should be located away from noisy areas like the gymnasium and should be placed so that physical expansion will be possible, if necessary. Another consideration in locating the center is access from outside when other parts of the school building are closed. The size of the facility should be appropriate for school enrollment and should accommodate the current collection of printed and other materials as well as anticipated acquisitions. The nature of the facility will depend on the educational level of the students although there are some common requirements which are unaffected by the age of the users. For instance, carpeting of floors will insure a low noise level; walls should be treated too so that maintenance requirements are not excessive; ceilings should provide desired acoustical level; heating and ventilating outlets should be installed so that they do not interfere with shelving and so that heat flow will not damage books; and electrical outlets should be accessible where audiovisual and other equipment will be used.

303.01 Circulation Area

303.011 Space Allocation - 150 to 200 square feet

303.012 Activities
Exhibits, copying equipment, card catalogs, periodical indexes and charging. Provisions for microcomputer work station.

303.02 Reading/Browsing Area

303.021 Size - 30 square feet per reader

303.022 Capacity

8 to 12 percent of the total student body. Provision should be made to include a story telling area at the elementary level.

303.023 Location
See factors mentioned in comment about this center in Chapter 3, Section 303.

303.024 Activities
General reading, reference and research work with encyclopedias, books, dictionaries, maps, pamphlets, charts, globes and pictures; browsing; viewing displays; magazines; charge-out of materials; previewing non-book materials; and class instruction in the use of the library.

303.025 Equipment Space and Facilities

A. Provisions for microcomputer work stations
B. Tables of various sizes, shapes and chairs. All furniture should be sized to the students using it.
C. Vertical files
D. Reference stands for dictionaries
E. Map stand
F. Storytelling area
G. Informal reading area - periodicals and books; lounge-type furniture
H. Book trucks
I. Wet and dry carrels
J. Movable shelving - 5 feet, not to exceed 6 feet, high

and 12 inches deep

K. Electrical outlets available. Duplex service receptacles should be installed on all walls. Sufficient branch electrical circuits service should be in each room

L. Where there are to be specialized facilities such as language labs, study carrels, micro-teaching and television, provision should be made for electrical service in the floor.

M. Conduits should be provided to permit future installation of computer terminals, television and other electronic instructional devices.

N. System conduits should be at least 1½ inches in diameter in order to provide for installation of television and other teaching devices as indicated above.

O. Acoustical treatment in this area is essential. Use of audio devices mandates acoustical treatment of walls, ceilings and floors in media centers and other such areas.

P. Carpeting

Q. Light control. Adequate provision for controlling the light level in instructional areas is essential. For efficient use of projection-type materials, the light in the room, particularly in the area of the projection surface, should not exceed one-tenth foot candle.

R. For preservation of book and non-book materials and equipment, temperature and humidity control are essential. Air conditioning of media center and production area is recommended.

303.03 Director's Office

303.031 Size
Space, depending upon size of staff, approximately 150 square feet

303.032 Location
Should be located adjacent to, and connected with, the circulation area. A glass partition should be placed in the wall between this area and the office.

303.04 Maintenance, Repair and Distribution Area

303.041 Size - 300 to 400 square feet

303.042 Location
Readily accessible to the administration and reading/browsing areas.

303.043 Activities
Processing, maintenance and minor repairs of book and non-book materials and equipment.

303.044 Equipment Space and Facilities:
A. Counter tops
B. Storage cabinets
C. Typewriters
D. Sink
E. Electrical outlets
F. Shelving

303.05 Media Production Lab - Optional

303.051 Size - 300 to 400 square feet

303.052 Location
Accessible to administration area and main building corridor.

303.053 Activities
Production of photographic, graphic and audio materials.

303.054 Equipment Space and Facilities
A. Refrigerator
B. Sink with running water
C. Electrical outlets
D. Exhaust fans
E. Standard darkroom with equipment
F. Light control
G. Floor drains
H. Air conditioning
I. Basic graphic production equipment
J. Basic audio production equipment
K. Duplicating equipment

303.06 Viewing/Listening/Conference Area

303.061 Size
150 to 200 square feet with provision for subdivision into viewing/listening or conference areas by movable walls. Provide multi-spaces for larger facilities.

303.062 Location
Accessible to reading/browsing area

303.063 Activities
Seminars and small group seminars; previewing; listening to recordings.

303.064 Equipment Space and Facilities
A. Adequate electrical outlets
B. Acoustical treatment
C. Light control of each small area

303.07 Equipment Storage Area - Instructional Materials, Supplies and Equipment

303.071 Size - 300 to 400 square feet

303.072 Design Capacity
Storage of all audiovisual equipment during vacation period.

303.073 Location
Adjacent to work room. Limited access with provision for maximum security.

303.074 Activities - Storage and Circulation

303.075 Equipment Space and Facilities
A. Temperature, humidity and dust control
B. Locking storage cabinets
C. Door with lock without threshold strip - minimum 3 feet
D. Fire protection
E. 18 inch shelving

303.08 Periodical, Book and Newspaper Storage Area

303.081 Size - 150 to 200 square feet

303.082 Location

Adjacent to reading/browsing area.

303.083 Activities

Storage of periodicals, newspapers, books and non-circulating materials.

303.084 Equipment Space and Facilities

A. 18 inch shelving
B. Work table
C. Temperature and humidity control

Chapter 4

EARLY CHILDHOOD/PRIMARY EDUCATION K-4

400 EARLY CHILDHOOD/PRIMARY EDUCATION K-4 CENTERS

References:
  2. G-5

All schools housing early childhood programs contain general purpose instructional areas, specialized instructional spaces, auxiliary spaces, safety facilities and service facilities. The school is carefully planned and is large enough to maintain reasonable efficiency. Available technology is incorporated into environmental controls to provide a comfortable environment which facilitates the educational program. Where design considerations permit, the facility will be constructed in a manner that utilizes maximum natural light.

Early childhood education is the beginning of education in West Virginia public schools. The kindergarten and transitional kindergarten stages provide developmental activities designed to stimulate the intellectual, physical/motor and social/emotional development of the child and begin the process of basic skills mastery. The education program in grades K-4 reinforces the developmental activities and continues to enhance the mastery of the skills of reading; the basic communication skills of listening, speaking and writing; mathematics; social studies; physical and motor development; health/safety education; science education; and creative arts education.

400.01 Size of Centers

Early childhood/primary school centers should be organized for educational programs and administrative purposes according to the following enrollments.

A. Schools housing grades K-4 should have a minimum of 110 square feet per pupil unless factors such as enrollment or architectural design permit otherwise as determined by the state superintendent of schools. Regardless of school size, the teacher-student ratio should not exceed 25 students per teacher for regular instructional spaces.

B. Special class enrollments (such as special and early childhood education) must be considered in addition to the above figures.

C. Centers shall be planned for approximately 240 students per center. Smaller centers require approval from the West

Virginia Board of Education.

D. Square footage of facilities funded by SBA will be established in accordance with SBA Guidelines and Procedures Handbook.

401 ESSENTIAL PHYSICAL AND SERVICE FACILITIES

401.01 Certain physical and service facilities such as a multipurpose room, dining, assembly and music areas are provided in larger elementary school centers. Similar facilities, modified in size and/or combined use, are provided in smaller elementary centers.

The following chart indicates the facilities considered essential to the implementation of high quality early childhood/primary education. Consideration should be given to changing various learning spaces and activity areas through the use of folding or movable walls.

PHYSICAL AND SERVICE FACILITIES CONSIDERED ESSENTIAL FOR VARIOUS SIZED EARLY CHILDHOOD/PRIMARY EDUCATION CENTERS

Enrollment			Physical Facility
210	420	630	
			Areas for:
5	5	5	A. Early Childhood Education
1	1	1	B. Primary
1	1	1	C. Outdoor Activities
			Instructional Spaces (Special)
5	5	5	A. Corrective/Remedial
5	5	5	B. Exceptional Children
			Specialized Areas
2	2	3	A. Assembly Room
2	2	1	B. Physical Education
2	1	1	C. General Music Area and Storage Space
2	1	1	1. Soundproof Instrumental Area
1	1	1	2. Music Equipment and Material Storage
2	1	1	3. Practice Room
2	1	1	4. Instructor's Office
			D. Cafeteria
2	2	3	1. Multipurpose/Dining
1	1	1	2. Food Preparation
1	1	1	3. Manager's Office
1	1	1	4. Serving
1	1	1	5. Storage and Disposal
1	1	1	6. Employee Comfort
			E. Administrative
1	1	1	1. Principal's Office
1	1	1	2. Reception Room
4	4	4	3. Teacher's Work Room
1	1	1	4. Health Unit
1	1	1	5. Conference/Special Instruction Room
1	1	1	6. Storage
1	1	1	7. Staff Lounge and Toilets
1	1	1	8. Guidance Unit

			F.	Learning/Resource Center	
4	4	4		1.	Reading/Browsing Area
4	4	4		2.	Director's Office
4	4	4		3.	Maintenance, Repair and Work Area
4	4	4		4.	Production Area
4	4	4		5.	Viewing/Listening Area
4	4	4		6.	Equipment Storage Area
4	4	4		7.	Periodical, book and newspaper storage area
1	1	1	G.	Computer Laboratory or Distributed Network	
			H.	Instructional Areas	
2	1	1		1.	Art
2	1	1		2.	Science
2	1	1		3.	Art/Science Storage
			I.	Toilets	
1	1	1		1.	Students
1	1	1		2.	Staff
			J.	Custodial	
1	1	1		1.	Office intercom and toilet
1	1	1		2.	Receiving, storage, disposal and workroom
1	1	1		3.	Outside storage for lawn tools and equipment
1	1	1		4.	Slop sink areas
1	1	1	K.	Heating plant and fuel storage	
			Service Facilities		
1	1	1	A.	Light	
1	1	1	B.	Heat, ventilation & air conditioning	
1	1	1	C.	Telephone	
1	1	1	D.	Educational television	
1	1	1	E.	Water	
1	1	1	F.	Sewage	

1 Facilities provided in each center for specified purpose.

2 Facilities provided in each center; however, multiple use may be made of a single space. The space must be designed and equipped to permit its use for various purposes during the school day.

3 Separate facility provided in each center, but should be planned to accommodate compatible activities.

4 Facilities should be provided in each school.
NOTE: Planning may permit combining areas.

5 Facilities provided in each center where included in educational program.

402 KINDERGARTEN AND TRANSITIONAL KINDERGARTEN

402.01 Size
Base the preliminary determination of early childhood education areas upon the allotment of 50 square feet per child.

402.02 Design Capacity - 20 students

402.03 Location

A. On ground floor with easy access to an entrance not generally used by older children. Corner areas are also preferable to permit the development of separate, fenced-in play areas.

B. Direct access to segregated outdoor play area that contains a covered all weather area and a large grassy area with climbing equipment, obstacle course and garden area and adequate storage for equipment.

C. Area of the building which permits maximum natural light.

402.04 Activities
Major learning activities include: Units of work on areas of immediate interest, physical education, conversation, discussion, listening activities and creative activities with various media.

402.05 Equipment Space and Facilities

A. Work areas
    A. Deep sink equipped with mud trap, hot and cold water
    B. Waterproof counter top - 2 square feet per student with shelving beneath. Counter height to accommodate 5 year old children.
    3. Grounded duplex electrical outlets at 3 feet intervals over county top. NOTE: Avoid placing over sink.
    4. Facilities for hanging mobiles from ceiling.

B. Instructional space and storage area for activities related to: art, science and nature, music and rhythmics, language development, creative play, crafts and construction.

C. Pupil wrap area (storage for personal belongings)

D. Toilet facilities (within the early childhood area) and drinking

fountains
E. Display space - movie screen/access to microcomputer
F. Provide light control facilities (ie., dimmer switches and blackout drapes for audiovisual media work)
G. Special consideration should be given to the HVAC system design to remove cold air from the floor during the heating season.
H. Acoustically treat to protect instructional areas from outside noises
I. Material combination of carpeting and resilient material
J. Movable student tables and chairs of appropriate height, easily joined or separated
K. Teacher's combination desk/table and chair
L. Large wall clock

403 GENERAL INSTRUCTIONAL AREAS - PRIMARY

403.01 Size

Base preliminary determination of area upon the allotment of 28 to 30 square feet per student. To accurately determine the area needed, trial layouts should be made using scaled templates representing furniture and equipment on scaled drawings of floor and wall elevations.

403.02 Design Capacity - 25 students

403.03 Location
A. Acoustically treat to protect instructional spaces from the outside noise
B. Convenient access to the out-of-doors, particularly to recreational and physical education areas
C. If the building is a multiple-story structure, the first grade shall be assigned to the ground level floor

403.04 Activities

General learning areas may support a variety of activities including individual study and work, group interaction, lectures, reading, writing, demonstration and movement. These spaces will accommodate a variety of audiovisual and teaching equipment for both group and individual use.

403.05 Equipment Space and Facilities

Ample space, movable furniture and equipment and well-designed storage areas are essential.

A. Chalkboards, bulletin boards and other display areas - as much as possible, a minimum two-thirds of available wall space
  1. Chalkboards and bulletin boards should have map rails installed above
  2. The bottom of the display area should be at the eye level of the student when seated

B. Student wardrobe

C. Storage space (may be separate room)
  1. Open and closed adjustable shelving of various heights and depths for a variety of sizes of construction paper, charts and large format books - 30 linear feet of each
  2. Storage for teacher's personal belongings
  3. Filing space for instructional material and supplies equivalent to 4-drawer, legal size file cabinets

D. Work counter - see Chapter 4, Section 402.05

E. Teacher's combination desk/table and chair

F. Provisions for microcomputer work station

G. Conference-type table and chairs

H. Desks and chairs, or combination chair-desks

I. Desirable equipment
  1. Corridor display cabinet for students' work
  2. Rack for storage of periodicals pertaining to subject matter being taught
  3. All major types of audiovisual equipment should be readily available within classroom or in the nearby media center

J. Adequate provision for controlling the light level in instructional areas is essential. For efficient use of projection-type materials, the light in the room, particularly in the area of the projection surface, should not exceed one-tenth footcandle.

K. Duplex service receptacles should be installed on all walls of the instructional space for the use of instructional equipment. Sufficient branch electrical circuits service should be in each room. Conduits should be provided to permit installations of computer terminals, television and other electronic instructional devices. System's conduits should be at least 1½ inches in diameter in order to provide for installation of television and other teaching devices as indicated above.

L. A projection surface should be permanently installed in each instructional area with provision for eliminating keystoning.
M. Use of audio devices mandates acoustical treatment of walls, ceilings and floors in instructional areas and media centers, particularly in open-type classrooms where many activities are occurring simultaneously.
N. Combination of carpeting and resilient material

404 CORRECTIVE/REMEDIAL INSTRUCTIONAL AREAS

Specialized facilities in the form of small or specially equipped instructional areas are provided in each facility.

404.01 Size

Base preliminary determination of area upon the allotment of 28 to 30 square feet per student with 15 to 1 student/teacher ratio with aide.

404.02 Location

Adjacent to general instructional areas, acoustically treated to protect instructional spaces from outside noise.

404.03 Activities

Individuals and groups engaged in tutoring, adding stimulation, reducing stimulation and positive reinforcement of regular programs.

404.04 Equipment Space and Facilities

See Chapter 4, Section 403.05

405 MULTIPURPOSE ROOM

A multipurpose room is to be included. It should be based upon the amount of time required for the separate program activities to be housed.

405.01 Size

Base preliminary determination of multipurpose room area on the allotment of six to eight square feet per student enrolled in the school. Allow 12 to 15 square feet per student for dining. Allow approximately 65 square feet per student for physical education with 25 students per session.

405.02 Design Capacity

To be determined by school plant specialists.

405.03 Activities

To be determined on the basis of the school's program. Consideration should be given to providing a clear height from 20 to 24 feet if the room is used for such activities as basketball.

405.04 Location

A. Removed from quiet areas of the building by location and/or acoustical treatment
B. Direct access to outdoor physical education or recreation areas
C. Convenient access to public parking areas
D. Direct access to service drive
E. If used for dining purposes, locate close to kitchen

405.05 Equipment Space and Facilities

405.051 Stage - Optional

A. Provide 500 square feet of permanent or portable stage area. Consideration should be given to staging "in the round."
B. Two entrances to the stage, one direct from the building corridor. Entrances to be double door size.
C. Stage location should be one which makes instructional spaces accessible for use as stage dressing rooms.
D. Proscenium opening should be approximately ½ the width of the body of he multipurpose room.
E. Stage curtains of fire resistant materials, portable or permanent acoustical paneling and cyclorama and film projection screens should be part of the stage equipment.
F. Lighting facilities with controlled illumination.
G. Grounded duplex electrical receptacles - 5 to 10 - should be provided in the stage area.
H. Storage for electronic and stage equipment.
I. Every stage equipped with rigging for movable theater-type scenery and every enclosed platform larger than 500 square feet in area shall have a system of automatic sprinklers in accordance with the state fire code.

405.052 Chair and Table Storage
- A. Area as needed for storage of tables and chairs used for dining purposes
- B. Provision of ample space to accommodate assembly chairs stored on trucks

405.053 Equipment Storage
- A. Approximately 200 square feet with convenient access to the outdoor physical education area and direct access to multipurpose area
- B. Provide double doors with flush threshold
- C. Shelving and cabinets for storage of miscellaneous types of physical education and other equipment

405.054 Public Toilets
- A. If pupil toilets are not conveniently accessible for public use, 2 toilet rooms of approximately 50 square feet each should be provided.
- B. Toilets must conform to Chapter 18, Article 10F of the Code of West Virginia, which makes provisions for the orthopedically impaired.

406 FOOD SERVICE FACILITIES

See Chapter 3, Section 302.

407 ADMINISTRATIVE AND SERVICE FACILITIES

See Chapter 3, Section 301.

408 ENGINEERING AND CUSTODIAL FACILITIES

See Chapter 12.

409 FACILITIES FOR EXCEPTIONAL STUDENTS

All schools having education programs for exceptional students shall provide adequate space designed to facilitate mainstreaming and equal access for all students and teachers. All facilities for special education are contained within the building. Facilities are designed to assist students to function safely with as much mobility as possible and are accessible to handicapped students. Facilities which house self-contained classes or other specialized facilities required for all exceptionalities are designed, furnished, equipped and maintained to facilitate the program requirements set forth in the individualized education program. See Chapter 7, Exceptional Students - Instructional Areas, to determine which programs can best be provided in specialized facilities.

410 ART FACILITIES - Optional

Consideration may be given to providing multi-use space for the instruction of art and music or art and science.

410.01 Space allotment of 45 to 50 square feet per child with movable tables and chairs. Table dimensions no less than 36 inches x 60 inches for each 4 students. Art room should be located on the ground floor.

410.02 Equipment Space and Facilities

A. 2 deep sinks, each with extra large drain, cleanout trap, and long drainage top - stainless steel recommended
B. Uncarpeted floor of concrete, tile, linoleum or other material not easily damaged by paint and clay
C. Counter space equivalent to the length of at least one wall
D. Closed-in storage shelves under counter - 6 or more drawers of built-in or movable storage space for flat pictures, at least 20 inches x 40 inches - storage cabinets and/or display boards on wall above counter
E. Adjacent storage room with shelves for art supplies - space allotment of 250 to 350 square feet
F. At least one chalkboard, movable or stationary
G. Bulletin boards - 30 linear feet recommended. Movable display panels are also recommended. (Recommended for hallways and general areas: glass enclosed display space and movable display cabinets.)
H. Electrical outlets, 12 or more, located conveniently to working area
I. Audiovisual facilities may be separate, or combined with art room. These require blackout curtains and projection facilities.
J. Ceilings should be equipped with facilities for hanging mobiles.
K. Art appreciation corner with facilities for rotating display of two and three dimensional objects and related library materials. Recessed wall-display cabinets are desirable, but not essential.

L. Mechanical ventilation systems are utilized in the art rooms to handle fumes, dust, odors and gases from turpentine, lacquer thinners, acids, toxic markers and clays. Special areas such as kiln rooms, dark rooms, pug mills, burnout kilns and acid areas require additional specific ventilation.
M. Provision for ceramic kiln
N. If this space functions as a multi-use space, provide lockable storage for each academic area.

410.03 Location - Ground Floor location

410.04 Art facilities for small schools which have no special art room must include storage space for consumable art supplies, materials and equipment and an arts and crafts corner.

410.041 Arts and Crafts Space
A. At least one sink, preferably deep, with long drainboard, large drains and cleanout trap - stainless steel recommended.
B. Built-in counter with formica top and closed-in storage shelves beneath - at least 8 feet in length. This may double as work space or drying area for unfinished work.
C. Display board or bulletin board, 12 linear feet or more
D. Uncarpeted floor area of tile, linoleum or other material not easily damaged by paint and clay
E. Storage for art supplies in closet, case or small storage room
F. At least 2 electrical outlets, adjacent to work area

410.042 Art Appreciation Corner
Equipped with glassed-in display case with shelves for crafts; and wall space for displaying two-dimensional work. Should also accommodate a section for library materials in the form of built-in shelves or portable unit.

411 LIBRARY/LEARNING RESOURCE OR MEDIA CENTER

See Chapter 3, Section 303.

412 MUSIC FACILITIES - Optional

See Chapter 4, Section 410.

Physical and spatial requirements for music education obviously exceed the capacity of the conventional classroom. Spaces for individual and group vocal and instrumental instruction and rehearsal are necessary. The size, quality and number of these spaces will be determined by the enrollment and the educational level of the school, the scope of the music program and the degree of encouragement offered music education by the administration and the community.

A good location for the music room is in a wing of the building close to the stage or multipurpose room. Physical isolation should be sought to reduce the transmission of sound to other areas of the building. Practice rooms may be separated acoustically from the rehearsal room by placing storage rooms or wall having dead air space between them. It is important that the facility be arranged for supervision of all practice and storage rooms. Also, the temperature and humidity of instrument storage rooms must be maintained at acceptable levels.

412.01 This facility shall be large enough to accommodate physical movement and daily use of "classroom/general music" instruments for teaching general music and a facility for elementary instrumental music class instruction.

412.011 Size
400 cubic feet per student; ceiling 14 to 16 feet high. Allow space for design capacity of 25 students.

412.012 Location
A. Direct access to instrumental storage
B. Isolated area of building

412.013 Activities
Instruction in instrumental and classroom/general music

412.014 Equipment
A. Stereo sound reproduction and recording equipment
B. Piano and bench
C. Classroom instruments
D. Chalkboard, 30 linear feet
E. Folding chairs
F. Music stands
G. Filing cabinets - legal size

412.02 Office Space for Planning or Studio Teaching

412.021 Size
250 to 350 square feet - 8 to 12 students

412.022 Design Capacity
Accommodate small group

412.023 Location
Convenient to music room

412.024 Equipment
A. Desk and chair
B. Filing facilities
C. Chalkboard
D. Work table and chairs
E. Storage for tapes and records

412.03 Storage Space for Instruments, Equipment and Music

412.031 Size
Approximately 150 square feet. Secure room with shelving to accommodate stringed instruments, classroom instruments and legal size filing cabinets.

413 MICROCOMPUTER LAB

Whenever feasible, the use of technology in education will be integrated within the individual classroom, but there is a need for a demonstration/lecture laboratory to house equipment that may be utilized by all teachers and students. This laboratory will employ present day and futuristic applications of educational technology by exploring the areas of: computer controlled capability with use of modem, CD-ROM, laser disc, monitors and/or data projector; distance learning and teleconferences allowing interactive experiences; and authoring or production capabilities to develop programs and course ware for in-house applications. Ideally, the middle school instructional technology facility consists of one large room with a platform area for teacher demonstration/lecture and adjacent control room. This facility may also be used for large group instruction.

413.01 Size - 40 square feet per student

413.02 Design Capacity - 25 students

413.03 Location
Provide sufficient labs for use by each curriculum area. Core group

for smaller facilities and a minimum of one lab for each curriculum area in larger facilities.

413.04 Activities

Active use of microcomputer applications related to the curriculum.

413.05 Equipment Space and Facilities

A. 30 inches x 48 inches microcomputer work stations - 20
B. 30 inches x 60 inches host station - 1
C. Time-sharing printer stations - 4
D. Storage cabinets for disks and paper
E. Teacher's combination desk-table and chair
F. Due to the rapid advancement in computer technology, current information must be obtained before design work is completed.

Chapter 5

MIDDLE CHILDHOOD/JUNIOR HIGH EDUCATION 5-8

500 MIDDLE CHILDHOOD/JUNIOR HIGH EDUCATION 5-8 CENTERS

Reference:
2. G-6

Middle childhood education builds upon the results of early childhood education and provides educational opportunities to help students extend competence in basic skills; develop self-understanding, self-knowledge, independence and interdependence; and engage in exploratory experiences in academic areas and career education. In addition, enrichment studies are provided for a broad range of potential growth options. Middle childhood education serves learners during the 10-14 years age range. In this age range, students have rapid changes in physical growth and social and intellectual development and maintain or establish new values, attitudes and beliefs which influence their decisions to remain or drop out of school. The middle childhood education program emphasizes extension of basic skills, broadening of academic skills to assist students in making the transition from childhood dependence to adult independence and opportunities for exploration.

500.01 Size of Centers

An educational facility should be large enough to take advantage of reasonable economies of operation, comfortably accommodate the inhabitants and support the educational program. Other factors such as density of population, availability of sites and transportation should be considered in determining the size of facility.

A. All middle/junior high schools have a minimum allotment of 120 square feet per student, unless factors such as enrollment or architectural design permit otherwise as determined by the state Department of Education.

B. The size and type of facility will be determined by the number of students and the instructional program.

C. Centers (5-8 organizational pattern) shall be planned for a minimum of 600 students (85% utilization). Smaller centers or combination K-8 centers require approval from the West Virginia Board of Education. See Chapter 1, Section 100.016.

D. Square footage of facilities funded by SBA will be established in accordance with SBA Guidelines and

501 PLANNING PROCESS

501.01 Middle school programs and facilities to accommodate such programs are the result of careful, complete and creative planning.

501.02 Closely coordinated planning till include factors such as the school's role in the community, the characteristics of students, how students learn most effectively, the physically disabled and what constitutes the total coordinated program of learning in the middle/junior high school. Consideration should be given to changing various learning spaces and activity areas through the use of folding or movable walls.

501.03 Educational specifications shall be prepared to include a careful computation of room, area and building capacity as required to offer programs of study as outlined in the Master Plan, State Board Policy 2510 and the Criteria of Excellence. Additional educational specification requirements can be found in the SBA Guidelines and Procedures Handbook for new schools or schools with major additions funded by the SBA.

501.04 Departmentalization, specialization of instructional spaces, elective subjects and scheduling are factors to be considered in determining the number of teacher stations.

NOTE: The following formula considers only the number of students; none of the above are considered.

A. The number of teaching stations needed may be determined by applying the following formula to each subject area. (If general purpose instructional spaces are considered interchangeable for different subject areas, the calculation may be made for a group of subject areas.)

B. The basic formula:

$$\text{Number of Teaching Stations} = \frac{\text{Number of students enrolled in subject} \times \text{Number of periods per week in subject}}{\text{Desired average class size} \times \text{Number of periods per week each teaching station can be used.}}$$

501.05 The student capacity of a school building is affected by the educational program; it changes each time the program is modified. A more complete analysis of the operational capacity of proposed school buildings may be obtained by referring to:

A. Conrad, M.J., A Manual for Determining the Operating Capacity of Secondary Schools. Bureau of Educational Research and Service, Ohio State University.

B. Castaldi, Basil, The Castaldi Nomogram. The New England School Development Council.

501.06 In recent years, middle/junior high education has undergone considerable experimentation and change in four areas: School organization, curriculum design, teaching methods and school community relations. Included in these are:

A. Microcomputer network
B. Use of large group, small group and individual instruction
C. Use of programmed instruction with or without teaching machines
D. Use of distance learning and related media

502 GENERAL PURPOSE (ACADEMIC) CLASSROOMS OR INSTRUCTIONAL AREAS

Rooms should be designed to serve specific needs of language arts, foreign language, mathematics, social studies and certain other subject areas. They should also be designed to permit interchanged use as the educational program demands.

502.01 Size

Base preliminary determination of area upon allotment of 28 to 30 square feet per student. For example: 700 to 750 square feet of floor area should be planned for 25 students in an instructional space. To more accurately determine the area, trial room layouts should be made using scaled templates representing furniture and equipment and scaled floor and wall elevation drawings.

502.02 Design Capacity - 25 students

502.03 Location

A. Isolation from noisy areas of the building
B. Close proximity to the media center
C. Location which will permit easy expansion

502.04 Activities

Speaking; laboratory drills; lecture; group discussion; viewing slides, films and other projected materials; listening to recordings and broadcasts; writing or drawing on chalkboards, desk and/or tables; displaying students' work; storing instructional materials and supplies; demonstrations; and lab activities in mathematics, where stations with individual assignments are to be done with manipulative materials or computer equipment.

502.05 Equipment Space and Facilities

- A. Chalkboards, bulletin boards and other display areas - a minimum of two-thirds available wall space
  - A. Chalkboards and bulletin boards with map rails installed above
  - B. Bottom of display area should be at eye level of student when seated
- B. Student wardrobe
- C. Storage
  - 1. Teacher's storage for personal belongings
  - 2. Storage for teaching aids and supplies
    - A. Closed and open shelving
    - B. 4-drawer filing space
- D. Teacher's combination desk-table and chair
- E. Conference-type table and chairs
- F. Desks and chairs, or combination chair-desks
- G. Desirable equipment
  - 1. Corridor display cabinet for students' work
  - 2. Rack for storage of periodicals pertaining to subject matter begin taught
  - 3. All major types of audiovisual equipment should be readily available within classroom or the nearby media center.
- H. Adequate provision for controlling the light level in instructional areas is essential. (For efficient use of projection-type materials, the light in the room particularly in the area of the projection surface, should not exceed one-tenth footcandle).
- I. Duplex service receptacles should be installed on all walls of the instructional space for the use of instructional equipment. Sufficient branch electrical circuit service should be in each room. Conduits should be provided to permit future installations of computer terminals, television and other electronic instructional devices. System conduits

should be at least 1½ inches in diameter in order to provide for installation of television and other teaching devices as indicated above.

J. Where there are to be specialized facilities such as language labs, study carrels, micro-teaching and television, provision should be made for electrical service in the floor.

K. A projection surface should be permanently installed in each instructional area with provision for eliminating keystoning.

L. Use of audio devices mandates acoustical treatment of walls, ceilings and floors in instructional areas, media centers and other such areas, particularly in open-type classrooms where many activities are occurring simultaneously.

M. Carpeting and/or resilient floor covering where appropriate.

503 CORRECTIVE/REMEDIAL INSTRUCTIONAL AREAS - Optional

Specialized facilities in the form of small or specially equipped instructional areas are provided in each facility. Facilities should be designed to serve corrective/remedial needs of language arts, foreign language, mathematics, social studies and certain other subject areas.

503.01 Size

Base preliminary determination of area upon an allotment of 28 to 30 square feet per student. For example: 420 to 450 square feet of floor area should be planned for 15 students in an instructional space. To more accurately determine the area, trail room layouts should be made using scaled templates representing furniture and equipment and scaled floor and wall elevation drawings.

503.02 Design Capacity - 15 students

503.03 Location

A. Isolation from noisy areas of the building
B. Close proximity to the media center
C. Location which will permit easy expansion

503.04 Activities

Speaking; laboratory drills; lecture; group discussion; viewing slides, films and other projected materials; listening to recordings and broadcasts; writing or drawing on chalkboards, desk and/or tables; displaying pupils' work; storing instructional materials and supplies; demonstrations; and lab activities where stations with individual assignments are to be done with manipulative materials.

503.05 Equipment Space and Facilities
See Chapter 5, Section 502.05.

504 ART FACILITIES

Art facilities should accommodate the studio and classroom activities of a full art program. Basic to all activities would be space allotment, natural and artificial light, movable furniture or furnishings, display space, several kinds of storage space, deep sinks with cleanout traps and adequate electrical outlets.

504.01 Size
Studio, approximately 1,000 square feet or the equivalent, exclusive of storage. Provide one room for every 150 art students enrolled.

504.02 Capacity - Recommended class size for studio activities is 25 students

504.03 Location - Pertinent factors
A. Accessibility for consumable materials; ground floor location preferred
B. Need for uncarpeted floor in studio areas. Floors should be of concrete, tile, linoleum or other material not easily damaged by paint
C. Good lighting, both natural and artificial. Natural light is important for many activities and essential for painting.
D. Space should contain, or be accessible to facilities for the use of slides and film - blackout curtains, projection facilities and chairs equipped with tablet arms.
E. Power tools and equipment may, subject to local policy, be borrowed from or shared with industrial arts area.
F. Provide power ventilation for removal of fumes, dust, odors and gases from turpentine, lacquer thinners, acids and toxic markers.

504.04 Activities
Basic - drawing, painting, sculpturing, ceramics, design, art history and appreciation and crafts.

504.05 Equipment Space and Facilities
A. Sink and work-counter units

1. Hot and cold water with mixing faucets
2. No less than 2 deep sinks of stainless steel with long drainboards
3. Large drains and cleanout traps
4. Long counter for mixing paints and other activities
5. Storage for mixing pans, water jar and brushes (under sink and counter)

B. Special storage for:
   1. Drawing boards
   2. Shelves for storage of flat work, a minimum of 28 inches x 40 inches - may be built in or movable
   3. Prints - similar to above
   4. Audiovisual materials and special books
   5. Tools used in construction
   6. Unfinished work

C. Chalkboard - at least 6 linear feet

D. Bulletin boards - all available wall space - at least one full wall

E. Display facilities for projects, glass covered in studio and hall

F. Work benches, tilt-top tables and easels as selected by instructors, movable to permit flexible grouping, with accommodations for:
   1. Teachers' desk and storage area
   2. Provision for hanging mobiles from ceiling

G. Doorway opening at least 42 inches wide

H. Duplex outlets along wall spaces and above work counter - no less than 12

I. All electric and gas kilns hooded and mechanically ventilated when in use

J. A ceramic kiln co-located with each general art classroom

504.06 Storage Room

300 to 400 square feet, to include shelves for paper, paints and supplies; also for unfinished work which cannot be stacked, such as wet paints, prints and ceramics. Special shelf in studio or storage room for unfinished constructions, at least 20 linear feet.

505 BUSINESS EDUCATION FACILITIES

505.01 All Purpose Business Education Room

This room would be needed for a small school (up to 150 business students per day) with only one business teacher. Therefore, it is necessary to provide adequate space to store, maintain and use a vast amount of equipment and supplies. The room consists of the following:

A. Equipment oriented instructional lab area for courses such as Business Computer Applications, Advanced Business Computer Applications, Keyboarding and Office Technology
B. Multipurpose classroom instructional area for courses such as Accounting, Business Principles and Management, Shorthand/Abbreviated Writing and Business Math
C. Storage for teaching materials, supplies and student references
D. Teacher's desk and demonstration center

An electrical grid system of 5 feet with flush floor outlet should be installed. A lavatory with hot and cold water should also be provided. Because of the chemicals contained in some of the correction materials, carbon packs, toners, and reprographic equipment, students and instructors need to have immediate access to a lavatory for their health and safety.

505.011 Size
1200 to 1400 square feet - 60 to 70 square feet per student

505.012 Design Capacity - 25 students per session

505.013 Location
In the central core of the building

505.014 Activities
Lecture or carry on small group or class discussions; view slides, films and other projected materials; conferences of small groups of students, display student projects or work; store partially completed student projects; store instructional supplies; listen to recordings or broadcasts; view telecasts; write and transcribe notes; operate keyboarding equipment/microcomputers and other business equipment.

505.015 Equipment Space and Facilities
A. Bulletin board - 10 linear feet
B. Electrical convenience outlets on each wall
C. Calculators
D. Storage (lockable) for instructional supplies
E. Storage for instructor's personal belongings
F. Lockable, legal size file drawers - 16

- G. Closed bookshelving - 10 to 12 linear feet
- H. Microcomputers/modem and access to network
- I. Plain paper copier
- J. Electronic typewriters or microcomputers
- K. Overhead projector/screen
- L. Dictation/transcription equipment
- M. Letter quality and dot matrix printers
- N. Chalkboard - 40 to 42 linear feet
- O. VCR and monitor
- P. Provisions to darken room
- Q. Adjustable classroom furniture (desks and chairs)
- R. Instructor's desk and chair

506 CONSUMER/HOMEMAKING FACILITIES

The middle childhood consumer and homemaking area of study is designed to be exploratory in nature, broad in scope and integrated and/or coordinated with other subject matter areas.

506.01 Consumer and Homemaking Instructional Size and Space
Ideally, the middle school home economics facility consists of one large multipurpose room with adequate space to carry out a comprehensive curriculum. However, if more than one teacher is currently employed or if it is anticipated that in the near future more than one teacher will be needed, sufficient rooms are included in the original plan for meeting needs. Regardless of the number of rooms in a facility, each room is used for teaching more than one area of instruction.

Description of Facility	Space - Sq.Ft.	Design Capacity
One all purpose room, designed for a one teacher department, consisting of: Space and equipment for teaching clothing and textiles, nutrition and foods, personal development/family relations, world of work, management and consumer education. 1. Foods Laboratory - 40 to 50 square feet per student. See Chapter 8, Section 805.021 for specialized equipment and	95-100 square feet per student	25

facilities requirements.

2. Clothing Laboratory/Multipurpose Room - 50 square feet per student (minimum 1000 total square feet). See Chapter 8, Sections 805.04 and 805.05 for specialized equipment and facilities requirements. Also, include space and equipment for:
    a. Storage of teaching materials, supplies and student references
    b. Teaching center
    c. Display case
3. Classroom (optional)

TOTAL SQUARE FEET	**1900-2500**

Two multipurpose rooms, designed for a two or more teacher department with:

Room 1 consisting of:

A.	Space and equipment for teaching foods and other instructional areas listed above	40-50 square feet per student	25
B.	Storage for teaching materials, student projects, supplies and references		
C.	Teaching center		

Room 2 consisting of:

A.	Space and equipment for teaching clothing and other instructional areas listed above	40-50 square feet per student	25
B.	Storage for teaching materials, student projects, supplies and references		
C.	Teaching center		

Classroom	700-750 square feet	
Conference/office area	150-200 square feet	
Display Case		24
TOTAL SQUARE FEET		**2874-3474**

A peripheral arrangement with a minimum of fixed equipment or furnishings extending out into the room promotes flexibility in the use of space. Equipment is arranged in relation to point of use to prevent congestion. Five feet is allowed between tables for students to pull out chairs and be seated and to permit instructor supervision.

506.02 Design Capacity - 25 students (Lab); 25 students (Classroom)

506.03 Location

Facilities should be located on the ground floor, preferably near an outside entrance for:

A. Convenient delivery of groceries and instructional materials
B. Convenient installation and removal of large equipment
C. Easy accessibility for physically handicapped persons
D. Easy accessibility for parents and other visitors
E. Convenient entry for adult students and other persons seeking help with home-related problems

In multi-teacher facilities, rooms adjacent to each other tend to unify the program by allowing for ease of communication, sharing of equipment and exchanging rooms for instruction. In schools with several rooms, rooms on both sides of the corridor make for a more compact facility than a row of rooms the length of the corridor. The home economics facilities may be placed near social studies instructional spaces, science laboratories and art centers to facilitate coordination of subjects.

506.04 Activities

Viewing slides, films and other projected materials; class discussions; lectures; demonstrations; individual, small or large group activities such as vocational youth organization activities; selecting, planning, carrying out and evaluating varied student projects; preparation of teaching materials and planning of program activities.

506.05 Equipment Space and Facilities

A. Provisions made for blinds, shades and/or draperies at the windows to control classroom light levels. For efficient use of projection-type materials, the light in the room should not exceed one-tenth footcandle.
B. Window sills located 40 inches or higher above the floor when storage cabinets are to be installed along that wall.
C. Electrical needs
    1. A separate electric control panel for the facility

located in or adjacent to the home economics department.
2. Sufficient grounded electrical outlets located near the point of use to accommodate use of many pieces of equipment at one time.
3. Ample switches and outlets provided on each wall in each room

D. Plumbing needs
1. Adequate and properly located plumbing connections provided for the equipment
2. Continuous supply of hot and cold water provided; separate hot water heater and water softener may be needed

E. Sufficient space provided for easy movement of students and instructor

F. Major floor area of each room free of heavy or permanently fixed equipment to allow for flexible room arrangement

G. Doors placed to prevent interference with traffic patterns

H. Chalkboards, bulletin boards and other display areas - a minimum two-thirds of available wall space - at least 8 linear feet of chalkboard and 15 square feet of bulletin board space per room

I. Projection surface permanently installed in each instructional area with provision for eliminating keystoning

J. Tables and chairs for seating of entire class - can be rearranged for small or large groups and for demonstrations as needed

K. Storage needs - Both general storage and storage within the instructional areas are provided. The two most commonly used types of storage arrangements are: (1) the separate room and (2) cabinets and/or open shelves within the classroom. Some advantages to the separate storeroom are: leaves more wall space within the classroom and frees floor space for flexible arrangement when items not in use are placed in the storeroom. A combination of the two types is desirable with a separate room for storage of large equipment which is not used frequently and cabinets in the classroom for student items, small equipment and frequently used teaching materials.
1. Shelving conveniently spaced and/or adjustable to fit the size and shape of equipment to be stored such as portable sewing machines, reference books, audiovisual equipment and small equipment items

2. Drawers of a depth to serve the materials or equipment to be stored
3. Mobile base cabinets providing additional work space and allow for more flexibility in room arrangement
4. Heavy articles stored at a carrying level
5. Movable trays or pullout sections used instead of shelves to facilitate removing articles
6. Total amount of storage space expanded by using items such as "lazy susan" shelves, divided drawers, vertical shelves and stairstep shelves
7. Closed storage space provided for items that need to be protected, are not used frequently or may detract from the appearance of the room
8. Cabinets with locks provided for storage of items such as electrical appliances, portable sewing machines, food and audiovisual equipment
9. Storage units located near the department's entrance for temporary storage of students' books and personal belongings
10. Storage space provided for cleaning supplies and equipment

L. Teacher/conference area - may be located in a designated area of the all-purpose room or in a separate room. A separate room is desirable when there are 2 teachers and is essential for 3 or more teachers. If a separate center is necessary, it should be accessible from all rooms in the home economics facility. An additional shared conference area for several disciplines should be available in the middle school facility to accommodate inter-disciplinary planning needs.

1. Teacher's desk and chair - 1 each per teacher
2. Lockable storage for teachers' belongings
3. Open and closed adjustable shelving - minimum 30 linear feet
4. 4 drawer file cabinet - 1 or 2 per teacher
5. Electrical outlet by each teacher's desk

M. Carpeted area in the facility is optional

506.06 Nutrition and Foods Specialized Equipment and Facilities

A. Kitchen units arranged in different patterns (U-type, L-type, one wall, island, corridor) to simulate home conditions. One should be planned for demonstration purposes and include an adjustable overhead mirror. Unit kitchens are arranged for easy supervision by the teacher. Upper peninsular cabinets and range hoods that block the teacher's view are avoided.

1. Each unit kitchen consists of: double sink, range, base and wall cabinets, tables, chairs and 10-12 linear feet of work surface, excluding sink and range
2. 24 to 30 inches of base cabinets recommended at the left of each range and left and right of the sink; also allow space for mixing centers
3. Sink located between range and mixing centers in each unit
4. Waste disposal included in one unit
5. 24 to 30 inches of counter work space provided for each student working in a unit kitchen. Adequate storage for basic equipment and supplies located in each kitchen unit with special equipment and food supplies located nearby.
6. Tables and chairs adjacent to the kitchens for serving purposes.
7. Exhaust ducts and/or range hoods with fans to pull odors and fumes out of the room.

B. At least one 48 inches x 72 inches cabinet with adjustable shelves needed for storing extra supplies, equipment and classroom materials
C. Variety of cabinet and counter materials, range and refrigerator models, and fuels should be used
D. Use of non-porous floor covering and finish for walls in unit kitchens
E. Minimum of 3 electrical outlets per kitchen unit needed
F. Refrigerator, with freezer compartment, accessible to kitchen units - 24 to 36 inches of counter space provided adjacent to the latch side of the refrigerator
G. One portable of built-in dishwasher, optional
H. Microwave oven - 1 or 2
I. Fire extinguisher, blanket and first aid kit

506.07 Laundry Area

A. Automatic washer and dryer (gas dryer must be vented to outside)
B. 36 inches of counter space
C. Base and wall cabinet for storage
D. Located in a space which allows for class demonstrations

506.08 Textiles and Clothing Area

- A. Adequately planned to allow use as a multipurpose area for the instruction of other home economics curricula
- B. Multipurpose tables - 28 inches x 42 inches x 60 inches - minimum of 5 feet between tables
- C. Multipurpose chairs - 1 per student
- D. One sewing machine per 3 students. These may be a combination of cabinet-type and portable, which may be stored when not in use.
  - 1. Each sewing machine and chair/stool provides a minimum of 3 feet for pull out space
  - 2. Facility planned so that sewing machines can be stored when not in use to free space for multiple uses
  - 3. Grounded electrical outlet available for each machine
- E. Pressing areas - one for each 10 students. These include:
  - 1. Ironing boards
  - 2. Steam irons
  - 3. Grounded electrical outlet in each pressing area
- F. Full length, triple mirror, optional
- G. Lockable storage
  - 1. Cabinets for tote trays located near the entrance. One tote tray per student - 4 3/4 inches x 12 inches x 18 inches. Top of upper tote tray should not be more than 60 inches from the floor.
  - 2. Cabinets or closet with adjustable rods for hanging garments. Allow to 6 linear feet.
  - 3. Cabinets or walk-in closet for the storage of equipment, samples, portable machines and other materials and supplies.
- H. Running water source provided

507 FOREIGN LANGUAGE FACILITIES

Factors influencing the type of foreign language facility to be chosen include the type of laboratory facility desired. Laboratory facilities can be an electronic classroom, a language laboratory into which students are scheduled from classes held in general purpose classrooms or general purpose classrooms adapted for foreign language study.

507.01 Electronic Classroom

507.011 Size

35 square feet per student, exclusive of storage space

507.012 Design Capacity
Allow five percent more stations - maximum class size 25.

507.013 Location
Near media center and isolated from noisy areas of building.

507.014 Equipment Space and Facilities:
A. Chalkboard - minimum of 20 linear feet; display and map rail above
B. Bulletin board - minimum of 10 linear feet; display and map rail above
C. Storage
    1. Teacher's storage for personal belongings
    2. Closed and open shelving - minimum of 24 linear feet of each
    3. Tape racks and storage cabinet
    4. Record racks and storage cabinet
D. Teacher's combination console-desk and chair
E. Conference-type table and chairs
F. Student seating
    1. Stationary tables wired to reproduce sound from console and movable chairs
    2. Overhead wiring on dropable units to reproduce sound from console and combination chair-desks (This type installation needs fewer square feet per student than stationary tables).
G. Duplex electrical outlets on all feasible walls
H. Bookshelving - minimum of 20 linear feet
I. Provision for darkening room
J. Microphones, one per station
K. Headsets, one per station
L. Carpeting, desirable
M. Projection surface
N. Jack and plug to place sound track from 16 mm projector into classroom sound systems, desirable

507.02 Language Laboratory

507.021 Size
35 square feet per student, exclusive of storage space

507.022 Design Capacity

Allow five percent more stations - maximum class size 25 students

507.023 Location
In center of, or adjacent to, foreign language classrooms.

507.024 Activities
Language laboratory drill and recording

507.025 Equipment Space and Facilities
A. Chalkboard - minimum of 10 linear feet
B. Bulletin board - minimum of 10 linear feet
C. Storage
  1. 4 drawer filing space
  2. Tape storage space
  3. Record storage space
  4. Lockable storage spaces for any detachable equipment, such as headset and microphones
D. Teacher's combination console-desk and chair
E. Stationary booths and movable chairs for students
F. Duplex electrical outlets on all walls
G. Headsets, one per station
H. Microphones, one per station
I. Provision for darkening rooms
J. Carpeting, optional
K. Projection surface

507.03 Teacher Work Area

507.031 Size
Area as needed, approximately 250 square feet

507.032 Design Capacity
Two instructors and several students

507.033 Location
Opening into language laboratory or classrooms

507.034 Activities
Preparation of tapes, duplication of tapes and records, preparation of instructional materials, small group activities, reading, grading.

507.035 Equipment Space and Facilities
- A. Desk and chair per teacher - 1
- B. Legal size filing cabinet per teacher - 1
- C. Storage for instructor's personal belongings
- D. Table or movable cart for audiovisual equipment
- E. Conference table and chairs
- F. Chalkboard and bulletin board, minimum of 5 linear feet each
- G. Storage for instructional aids
- H. Soundproof area for recording tapes
- I. Telephone, desirable
- J. Projection surface

508 TECHNOLOGY EDUCATION FACILITIES

Factors influencing the location include providing location for easy delivery of instructional supplies, equipment and materials, some of which are bulky and heavy; design of laboratory to permit some change in individual room areas as activities are developed; and location which permits isolation from the remainder of the building. Since technology education programs differ from industrial arts programs, the assistance of specialists should be secured to adequately plan this suite. Technology education programs include instruction in the areas of communication, transportation, construction and manufacturing.

508.01 Technology Education Production Laboratory

508.011 Size

The area should range from 100 to 125 square feet per student, laid out to permit open areas for construction of large group projects.

508.012 Design Capacity - 20 students

508.013 Location
- A. Direct access from the building corridor
- B. Convenient access to other rooms in the technology education suite
- C. Direct access to service drive

508.014 Activities

The laboratory facility will need to provide space for layout, measurement, cutting, forming and fabricating using a variety of materials (ie, wood, metal, plastics); a large open space for construction of group projects such as geodesic domes, space for using and caring for hand tools and a variety of machines; and space for finishing various materials. Facilities for instructional space and the use of all types of audiovisual equipment is necessary.

508.015 Equipment Space and Facilities

A. The major floor area should be free of heavy or permanently fixed equipment to allow for flexible room arrangement
B. Chalkboard and bulletin board - 8 linear feet minimum
C. A minimum of 4 work stations, with underneath storage
D. Maximum work counter and cabinet storage space
E. Wall mounted lockable tool panels, if a tool room is not available
F. Windows should be high enough to permit installation of equipment along outside walls
G. Provisions made for blinds or shades to allow for showing of audiovisual projection materials
H. Ceiling electrical grid system for 110 volt power to machines with master switches and emergency cut-off buttons
I. Adequate electrical wall outlets for power equipment and tools
J. Facilities for removal of chips, dust and harmful fumes
K. Door to corridor, minimum 48 inches wide
L. Outside door to service drive - double external doors with a removable mullion
M. Fire extinguishers of such kinds and sizes as recommended by the State Fire Marshal
N. Wash up area for personal cleanliness and preparation and cleaning of tools and supplies
O. Lighting should provide 75 footcandles throughout
P. Refer to the "Technology Education Curriculum Guide" for specific equipment necessary

508.02 Technology Education Communication Laboratory/Classroom

508.021 Size

Determination of size depends upon the number of students and related activities, varying from 45 to 50 square feet per student.

508.022 Design Capacity - 20 students

508.023 Location
Direct access to production laboratory to provide for easy supervision.

508.024 Activities
Classroom instruction, project planning, small group activities, and a dust-free environment for instruction and activities with equipment such as computers, robotics, electronics, and lasers.

508.025 Equipment Space and Facilities

A. Glass walls or windows in wall facing laboratory to provide for easy supervision
B. Chalkboard - 20 linear feet minimum, and bulletin board - 10 linear feet
C. Maximum counter and cabinet storage space along walls (Some of this space may be used for computers. If so, height needs to be adjusted accordingly.)
D. Windows should be high enough to permit installation of counters along outside walls
E. Provisions made for blinds or shades to allow for showing of audiovisual materials
F. Adequate electrical wall outlet strips for use of electronic equipment, computers and related peripherals
G. Reconfigurable tables and chairs for 20-25 students
H. Bookcase for reference and resource books; magazine rack
I. Wall mounted projection screen
J. Floors - tile or other resilient covering
K. Ceiling - acoustical-type finished ceiling
L. Air-conditioning

508.03 Instructor's Office

508.031 Size - 100 to 150 square feet

508.032 Location

Convenient or direct access to production laboratory and communication laboratory. (Could be part of communication classroom)

508.033 Equipment Space and Facilities
- A. Teacher's desk and chair
- B. Conference chairs - 1 or 2
- C. Storage
  - 1. Letter size, 4-drawer file cabinets - 2
  - 2. Open and closed shelving for supplies and references, 20-30 linear feet
- D. Minimum of 2 duplex outlets

508.04 Raw Material and Tool Storage

508.041 Size - 150 to 250 square feet

508.042 Location
Direct access to production laboratory

508.043 Activities
For storage of various types of stock, tools and other supplies necessary in the technology classroom.

508.044 Equipment Space and Facilities
- A. Wide access door
- B. Storage racks for various types of stock. If stock includes wood and metal, rack may be as large as 4 feet x 8 feet
- C. Adjustable shelving and cabinets for small items and portable electric tools
- D. Peg board for display of hand tools

508.05 Project Storage

508.051 Size - 75 to 200 square feet

508.052 Location
Direct access to production laboratory

508.053 Activities
Limited to storage of student projects

508.054 Equipment Space and Facilities

A. Provide maximum adjustable shelving 24 inches deep along walls

B. Provide free floor area for storage of large items

NOTE: This storage may be provided in the form of cabinetry in the laboratory. If so, adjust square footage of laboratory accordingly.

508.06 Audiovisual Laboratory

508.061 Size - 100 to 200 square feet

508.062 Location
Direct access to communication laboratory

508.063 Activities
Developing film and photographic paper; enlarging pictures; demonstrating lasers, producing a variety of audiovisual materials such as mock radio and television segments.

508.064 Equipment Space and Facilities

A. Safe light as well as regular overhead lighting

B. Maximum work counter space

C. Maximum cabinet storage; some must be light safe

D. Positive ventilation

E. Sink and hot and cold running water

F. Electrical outlets along counter

G. Lightproof and soundproof from exterior influences

H. Additional electrical outlets for equipment usage

509 MUSIC FACILITIES

Factors influencing the location of this complex include: isolation from quiet areas of the building; ease of isolating the area for use during and after school hours; inclusion in the general arts area with convenient access to the stage; and direct or convenient access to the out-of-doors. Location of facilities within the suite should provide ease of supervision of all areas. Acoustical treatment should provide proper sonic environment to prevent sound transmission to remainder of the building.

509.01 Music Studio

NOTE: Classroom/general music, choral and instrumental studios may be planned as separate or combined facilities. Assistance in design and planning may be obtained from the music specialist of the state Department of Education.

509.011 Size - 30 to 40 square feet per student

509.012 Design Capacity - 25 students

509.013 Location

A. Direct access to instrumental storage
B. Direct or convenient access to other rooms in the music suite
C. Isolated as much as possible from quiet areas of the building

509.014 Activities

Instruction in classroom/general music, choral and instrumental music; viewing slides, films and other projected materials; listening to recorded music; movements; demonstrations of various types of instruments; writing or drawing on chalkboard and display materials.

509.015 Equipment Space and Facilities

A. Chalkboard - 30 linear feet, maximum, on front wall of which at least 8 linear feet is etched with staff lines
B. Bulletin board - 8 to 10 linear feet, located near entrance
C. Storage for vocal and instrument accessories
    1. Wall cabinets for music folders
    2. Open shelving for books, tapes, cartridges and record albums, 12" deep and 12" clear height - 40 linear feet
D. Folding chairs with folding tablet arms
E. Music stands
F. Director's podium
G. Tape recorder
H. Conference/work table
I. Legal size, 4 drawer filing cabinets - 2-3
J. Wide door with flush threshold for moving large instruments to and from the studio
K. Microphone outlets for recording in the studio - 2 or 3
L. Stereo sound reproducing system with a minimum

capacity of 40 watts - 20 watts per channel
M. Piano and bench
N. Pupil wardrobes
O. Availability of audiovisual equipment
P. Instructor's desk

509.02 Practice Room - Optional

509.021 Size - 50 to 60 square feet each

509.022 Design Capacity - 2 to 4 students

509.023 Location
A. Convenient access from other music rooms
B. Access to instrumental storage without passing through studio
C. Convenient access from building corridor
D. Permit ease of supervision

509.024 Activities - Vocal and Instrumental Practice

509.025 Equipment Space and Facilities
A. Chairs and music stands - 2 or 3
B. Glazed partition of insulating glass for ease of supervision
C. Acoustical treatment
D. Independent, forced ventilation

509.03 Instructor's Office and Library
May be separate rooms or combination.

509.031 Size - Approximately 250 square feet

509.032 Design Capacity - 2 instructors and 6 students

509.033 Location
A. Direct or convenient access to other music rooms
B. Permit ease of supervision of studio and auxiliary rooms

509.034 Equipment Space and Facilities
A. Instructor's desk and chair
B. Legal size, 4 drawer filing cabinets - 3 or 4

C. Storage for instructor's personal belongings
D. Chalkboard and bulletin board - 6 to 8 linear feet each

E. Conference table and chairs
F. Storage for printed music, records, tapes and other instructional aids
  1. Open shelving - 15 to 20 linear feet
  2. Closed shelving - 30 to 40 linear feet
G. Stereo sound reproducing equipment
H. Music sorting rack

509.04 Instrument Storage

509.041 Size - Approximately 350 square feet

509.042 Provide storage shelving necessary to accommodate instruments of various sizes.

509.043 Temperature and humidity are maintained at acceptable levels.

509.05 Robe and Uniform Storage
May be in portable wardrobes or separate rooms, ventilate as needed.

510 PHYSICAL EDUCATION FACILITIES

Factors influencing location include: Isolation from quiet areas of the building; direct access to the outside and provision for closing off the area for after-school use.

NOTE: Although less desirable, these facilities may be combined with assembly facilities.

510.01 Gymnasium (Physical Education Learning station)

510.011 Size
Determination of size is dependent upon physical education spaces to be located - 5400 square feet minimum. Floor area should be marked for various games.

510.012 Design Capacity - Maximum of 35 students at 125 square feet per student.

510.013 Location
Convenient access from locker and shower rooms.

510.014 Activities
Include soccer, volleyball, basketball, football, softball, folk and square dance, gymnastics and other activities to meet the county curriculum. Recommend junior high basketball court (42 feet x 74 feet) with some spectator seating. As a minimum provide 24 feet ceiling height.

510.015 Equipment Space and Facilities

A. Provisions for using the learning center as 2 or more teaching stations may require canvas-net partition, folding door partition or mechanical folding walls.
B. Electrical outlets, record player, auxiliary lighting and cleaning equipment. Additional special outlets.
C. Forced ventilation
D. Small cases for display purposes - 2 or 3
E. Bulletin board - 12 to 16 linear feet
F. Public telephone
G. Drinking fountains (angle jet type)
H. Comfortable, low-wall seating
I. Wood gymnasium floor or equal

510.02 Gymnasium Equipment Storage Rooms
At least 2 in each station.

510.021 Size - Area as needed to store all equipment

510.022 Location
Directly accessible to each teaching station when the station is divided into 2.

510.023 Equipment Space and Facilities

A. Open storage area for items such as standards, vaulting horses, and horizontal bars
B. Enclosed storage cabinets for small items of physical education equipment
C. Double doors and flush threshold

510.03 General Storage

510.031 Size

Large enough to store all equipment

510.032 Location
Direct or convenient access to learning station

510.04 Male and Female Locker/Dressing Rooms

NOTE: Recommend treatment of walls in these areas with epoxied materials to enhance maintenance. Also similar floor materials.

510.041 Size
Dependent upon manner in which gym clothing, street clothing and towel distribution are handled and the number of students expected to use this facility, 600-700 square feet.

510.042 Location
A. Direct or convenient access to learning station
B. Direct access to outside physical education areas
C. Direct access to building corridor
D. Direct access to body-drying room
E. Permit ease of supervision

510.043 Activities
Dressing for physical education; storing street and gym clothes; informal talks with physical education instructors.

510.044 Equipment Space and Facilities
A. Street clothes lockers dispersed among gym clothes lockers
B. Space for additional lockers
C. Benches adjacent to or between rows of lockers
D. Small toilet room or partitioned area with water closet, lavatory and urinal
E. Forced ventilation
F. Mirrors to accommodate large number of pupils, shelving under each mirror and one full-length mirror
G. Bulletin board near entrance - 4 to 8 linear feet
H. Chalkboard - 6 linear feet
I. Drinking fountain

510.05 Male and Female Shower Rooms

510.051 Size - Approximately 200 square feet

510.052 Location
Access to locker/dressing room only through the body-drying room

510.053 Equipment Space and Facilities
- A. Gang showers - 12 to 16
- B. Master volume and maximum temperature controls
- C. Individual temperature and on-and-off controls
- D. Bar soap trays
- E. Forced ventilation
- F. Easily cleanable construction
- G. Floor drains away from normal traffic
- H. Hose bibb for hot and cold water
- I. Walls of non-absorbent material

NOTE: Individual dressing, drying and showering booths may be provided in girl shower area. The number should not exceed 4.

510.06 Male and Female Body-Drying Rooms

510.061 Size - Approximately 100 square feet

510.062 Location
- A. Direct access from locker/dressing and shower rooms; entries to require maximum travel distance through drying room
- B. Direct or convenient access from varsity locker/dressing room

510.063 Equipment Space and Facilities
- A. Stubb towel holders
- B. Floor drains away from center
- C. Forced ventilation
- D. Easily cleanable construction
- E. Hose bibb for hot and cold water

510.07 Towel Room - optional

510.071 Size - 50 to 60 square feet

510.072 Location
A. Convenient to the locker/dressing and shower areas
B. Permit ease of supervision from locker/dressing area and instructor's office

510.073 Activities
Temporary storage, distribution and collection of towels.

510.074 Equipment Space and Facilities
A. Shelving to accommodate laundered towels
B. Movable laundry carts to accommodate used towels
C. Dutch door for issuing and receiving towels

510.08 Laundry Area - optional

510.081 Size - Approximately 100 square feet

510.082 Location
Convenient to physical education and dressing rooms or areas

510.083 Activities
Launder and dry gym clothing.

510.084 Equipment Space and Facilities
A. Washing machine
B. Vented dryer
C. Laundry tub
D. Separate work surface for handling both clean and soiled clothing and equipment

510.09 Instructor's Office - 1 For Each Instructor

510.091 Size - Approximately 100 square feet

510.092 Location
A. Direct access to locker/dressing room
B. Direct or convenient access to gymnasium and outdoor physical education areas
C. Permit ease of supervision of locker/dressing rooms

510.093 Activities
Instructor's showering, toilet and dressing.

501.094 Equipment Space and Facilities

A. Toilet, lavatory and shower
B. Desk and chair
C. Conference chairs
D. 4 drawer filing cabinet
E. Storage of personal belongings
F. Bookshelving - 10 to 15 linear feet
G. First aid equipment
H. Telephone

510.10 Training Area - Optional

510.101 Size - 200 square feet

510.102 Location
Convenient to locker/dressing rooms.

510.103 Activities - Care of Body

510.104 Equipment Space and Facilities

A. Whirlpool hookup
B. Rub-down table
C. Heat lamps
D. Supply cabinet

510.11 Equipment Storage Room

510.111 Size - Approximately 150 square feet

510.112 Location
Convenient to locker/dressing rooms.

510.113 Activities
Uniform and equipment storage.

511 SCIENCE FACILITIES

Items to be considered in locating these facilities are: Ease of access to outdoor areas; ease of delivery of supplies and materials; and isolation so odors cannot infiltrate the remainder of the building.

511.01 Biology and/or General Science Classroom/Laboratory

511.011 Size

Base preliminary determination of area on allotment of 40 to 50 square feet per student; minimum 1000 square feet, exclusive of separate storage room.

511.012 Design Capacity - 25 students

511.013 Location

A. Direct access to project preparation room
B. Direct or convenient access to storage and growing room. Growing room facilities may be included in Instructional Space Laboratory.
C. Convenient access to other rooms in the science suite.

511.014 Activities

Instruction and demonstrations; class-size and small group discussion; individual and small group experimentation; viewing slides, films and other projected materials; writing or drawing at tables and chalkboards; individual study and research; displaying student projects.

511.015 Equipment Space and Facilities

A. Chalkboard - 20 to 30 linear feet, chart and display rail above
   1. Minimum of 40 inches clear height
   2. Major portion on front wall
B. Bulletin board - 10 to 12 linear feet, chart and display rail above
C. Work counter - 40 to 50 linear feet, minimum, and must have student work space to accompany it
   1. 3 to 4 acid-resistant sinks with hot and cold water
   2. Impervious work surface
   3. Gas and electricity
   4. Storage under work-counter
   5. Movable aquariums and terrariums
D. Closed shelving - 30 to 40 linear feet, 18 inches deep
E. Open shelving - 15 to 20 linear feet
F. Instructor's demonstration table including sink, hot and cold water, gas and electricity. Student work space of 2½ linear feet per student may be provided as equivalent student work space, which is not as

restrictive as combination desk-chairs.

G. Student tables and chairs - 2
H. Teacher's desk and chair
I. Facilities for darkening room
J. Fire extinguisher and blanket
K. Lavatory
L. Main shut-off valve located in a readily accessible location

511.02 Biology and/or General Science Storage
Shared storage areas recommended in multiple laboratory situations.

511.021 Size - Approximately 200 square feet

511.022 Location
A. Direct access from project preparation room
B. Direct or convenient access from instructional space laboratory and growing room

511.023 Equipment Space and Facilities
Maximum varied height and depth, adjustable shelving (150 linear feet minimum).

511.03 Project Preparation Room. May be planned as combination with storage area.

511.031 Size - Approximately 200 square feet

511.032 Design Capacity - Instructor and 6 students

511.033 Location
Direct access from instructional space laboratory and from building corridor.

511.034 Equipment Space and Facilities
A. Acid-resistant work surface with acid-resistant sink, hot and cold water, gas and electricity
B. File cabinet

511.04 Darkroom - Optional

511.041 Size - Approximately 100 square feet

511.042 Design Capacity - Instructor and 4 students

511.043 Location

A. Direct access from instructional space laboratory

B. Convenient access to corridor without passage through instructional space laboratory

511.044 Equipment Space and Facilities

Laboratory work-counter-acid-resistant sink, large enough to accommodate three pans.

512 LIBRARY/LEARNING RESOURCE OR MEDIA CENTER

See Chapter 3, Section 303.

513 EXCEPTIONAL STUDENT INSTRUCTIONAL AREAS

See Chapter 7, Section 700.

514 MICROCOMPUTER LAB - Optional

514.01 Size - 35 to 40 square feet per student

514.02 Design Capacity - 20 students

514.03 Location

Provide sufficient labs for use by each curriculum area. Core group for smaller facilities and a minimum of one lab for each curriculum area in larger facilities.

514.04 Activities

Active use of microcomputer applications related to the curriculum.

514.05 Equipment Space and Facilities

A. Microcomputer work stations, 30 inches x 48 inches - 20

B. Host station, 30 inches x 60 inches - 1

C. Time sharing printer stations - 4

D. Storage cabinets for disks, paper and other supplies

E. Teacher's combination desk-table and chair

F. Due to the rapid advancement in computer technology, current information must be obtained before design work is completed.

515 ELECTRONIC TECHNOLOGY LABORATORY - Optional

Whenever feasible, the use of technology in education will be integrated within the individual classroom, but there is a need for a demonstration/lecture laboratory to house equipment that may be utilized by all teachers and students. This laboratory will employ present day and futuristic applications of educational technology by exploring the areas of: computer controlled capability with use of modem, CD-ROM, laser disc, monitors and/or data projector; distance learning and teleconferences allowing interactive experiences; and authoring or production capabilities to develop programs and courseware for in-house applications. Ideally, the middle school instructional technology facility consists of one large room with a platform area for teacher demonstration/lecture and adjacent control room. This facility may also be used for large group instruction.

515.01 Electronic Technology Complex

515.011 Size - Approximately 2000 square feet

515.012 Design Capacity - 75 students

515.013 Location
Near media center and isolated from noisy areas of building

515.014 Equipment Space and Facilities

A. Dustless marking boards, approximately 10 linear feet
B. Bulletin board, approximately 10 linear feet
C. Storage
    1. Teachers' storage for personal belongings
    2. Closed and open shelving, approximately 50 linear feet of each
    3. Tape rack and storage cabinet
    4. Disc rack and storage cabinet
D. Platform area minimum 8 inches raised flooring for wiring
E. Adequate conduit throughout room to distribution panel
F. Adequate electrical outlets
G. Teacher station/console with control panel and phone line
H. Appropriate acoustical treatment depending on use of lab

I. Wall mounted monitors
J. Ceiling mounted data projector
K. Microphones - 1 per student station
L. Color correct lighting for video production and viewing
M. Adjustable lighting levels
N. Pull-down screen in platform area
O. On/off air sign at doors
P. Student seating - stationary tables and movable chairs
Q. Carpeting, desirable
R. Broadcast quality audio
S. Satellite receiving equipment, microwave , and/or fiber optics
T. Computer equipment
U. Due to the rapid advancement in computer technology, current information must be obtained before design work is completed.
V. Final technology designs must be approved by the Office of Technology and Information Systems (OTIS) in the state Department of Education prior to final approval by the State Board of Education.

515.015 Control Room
A. Size - approximately 150 square feet
B. Downlinking capability
C. Uplinking capability (when justified)
D. Broadcast capability

515.016 Activities

Telecomputing concepts to access bulletin boards/data bases, CD-ROM and laser disc interactive applications, usage of electronic music keyboards, microscopes, video cameras, etc., teleconference allowing live interactive classes. A video production engineer should be consulted when laboratories are designed for video production.

516 ADMINISTRATIVE AND SERVICE FACILITIES

See Chapter 3, Section 301.

517 FOOD SERVICE FACILITIES

See Chapter 3, Section 302.

518 ENGINEERING AND CUSTODIAL FACILITIES

See Chapter 12

519 STAGE

Locate for use in relation to the gymnasium or dining area for spectator seating. Must have convenient access to language arts and music instructional space and physical education locker/dressing rooms to permit use as stage dressing rooms.

A. Provide at least 800 square feet of permanent or portable stage area. Consideration should be given to staging "in the round".
B. Two entrances to the stage, one direct from the building corridor. Entrances to be double door size.
C. Stage location should be one which makes instructional spaces accessible for use as stage dressing rooms.
D. Proscenium opening should be approximately one-half the width of the body of the multipurpose room.
E. State curtains of fire resistant materials, portable or permanent acoustical paneling, cyclorama and film projection screens should be part of the stage equipment.
F. Lighting facilities with controlled illumination.
G. 5 to 10 grounded duplex electrical receptacles should be provided in the stage area.
H. Storage for electronic and stage equipment.
I. Every stage equipped with rigging for movable theater-type scenery and every enclosed platform larger than 500 square feet in area shall have a system of automatic sprinklers in accordance with the state fire code.

Chapter 6

ADOLESCENT/HIGH SCHOOL EDUCATION 9-12

600 ADOLESCENT/HIGH SCHOOL EDUCATION 9-12 CENTERS

600.01 Size of Centers
An educational facility should be large enough to take advantage of reasonable economies of operation, comfortably accommodate the inhabitants and support the educational program. Other factors such as density of population, availability of sites and transportation make it difficult to generalize about optimum size.

600.02 Allow 130 square feet per student, unless factors such as enrollment or architectural design permit otherwise as determined by the State Superintendent of Schools. Square footage of facilities funded by SBA will be established in accordance with SBA Guidelines and Procedures Handbook.

600.03 The size and type of facility will be determined by the number of students and the instructional program.

600.04 Centers shall be planned for a minimum of 800 students, 200 students per grade level. See Chapter 1, Section 100.0142.

601 PLANNING PROCESS

References:
2. G - 6.

601.01 Adolescent/high school programs and facilities to accommodate such programs are the result of careful, complete and creative planning.

601.02 The planning process is essentially identical for all types of educational environments. It involves identifying the users, describing the learning activities and their desired outcomes, defining the relationship of one learning space to others, describing needed equipment and furnishings and specifying special environmental considerations.

601.03 Educational specifications shall be prepared to include a careful computation of room, area and building capacities required to offer programs of study as outlined in the Master Plan, State Board Policy 2510 and Criteria of Excellence. Consideration should be given to changing various learning spaces and activity areas through the use of folding and movable walls. Additional educational specification requirements can be found in the SBA Guidelines and Procedures Handbook for new schools or schools with major additions funded by the SBA.

601.04 Departmentalization, specialization of instructional spaces, elective subjects and scheduling are factors to be considered in determining the number of teaching stations. See Chapter 3, Section 301.05.

NOTE: The following formula considers only the number of students; none of the above are considered.

A. The number of teaching stations needed my be determined by applying the following formula to each subject area. (When general purpose instructional spaces are considered interchangeable for different subject areas, the calculation may be made for a group of subject areas.)

B. The basic formula

$$\text{Number of Teaching Stations} = \frac{\text{Number of students enrolled in subject} \times \text{Number of periods per week in subject}}{\text{Desired average class size} \times \text{Number of periods per week each teaching station can be used}}$$

C. Example of tenth grade social studies:

$$\text{Number of Teaching Stations} = \frac{\text{200 students enrolled} \times \text{5 periods per week}}{\text{25 students per class} \times \text{30 periods of use of teaching station}}$$

= 1,000 student-periods of instruction
750 student-periods that can be provided in one teaching station
= 1.4

D. The formula may also be adopted to determine the student capacity of a proposed school building.

601.05 The student capacity of a school building is affected by the educational program; it changes each time the program is modified. A more complete analysis of the operational capacity of proposed school buildings may be obtained by referring to: Conrad, M.J., A Manual for Determining the Operating Capacity of Secondary Schools - Bureau of Educational Research and Service, Ohio State University; Castaldi, Basil, The Castaldi Nomogram - The New England School Development

602 GENERAL PURPOSE (ACADEMIC) CLASSROOMS OR INSTRUCTIONAL AREAS

Rooms should be designed to serve specific needs of language arts, foreign language, mathematics, social studies and certain other subject areas. They should also be designed to permit interchanged use as program needs demand.

602.01 Size

Base preliminary determination of area upon an allotment of 28 to 30 square feet per student. For example: 700 to 750 square feet of floor area should be planned for 25 students in an instructional space. To more accurately determine the area, trial room layouts should be made using scaled templates representing furniture and equipment and scaled floor and wall elevation drawings.

602.02 Design Capacity - 25 students

602.03 Location

A. Isolation from noisy areas of the building
B. Close proximity to the media center
C. Location which will permit easy expansion

602.04 Activities

Speaking; laboratory drills; lecture, group discussion; viewing slides, films and other projected materials; listening to recordings and broadcasts; writing or drawing on chalkboards, desk and/or tables; displaying students' work; storing instructional materials and supplies; demonstrations; and lab activities in mathematics where stations with individual assignments are to be done with manipulative materials.

602.05 Equipment Space and Facilities

- A. Chalkboards, bulletin boards and other display areas - as much as possible, a minimum two-thirds of available wall space
  - 1. Chalkboards and bulletin boards should have map rails installed above
  - 2. The bottom of the display area should be at the eye level of the student when seated
- B. Storage
  - 1. Storage for teacher's personal belongings
  - 2. Storage for teaching aids and supplies
    - a. Closed and open shelving
    - b. 4 drawer filing space
- C. Teacher's combination desk-table and chair
- D. Conference-type table and chairs
- E. Desks and chairs, or combination chair-desks
- F. Desirable equipment
  - 1. Corridor display cabinet for students' work
  - 2. Rack for storage of periodicals pertaining to subject matter being taught
  - 3. All major types of audiovisual equipment should be readily available within classroom or the nearby media center
- G. Adequate provision for controlling the light level in instructional areas is essential. For efficient use of projection-type materials, the light in the room, particularly in the area of the projections surface, should not exceed one-tenth footcandle.
- H. Duplex service receptacles should be installed on all walls of the instructional space for the use of instructional equipment. Sufficient branch electrical circuits service should be in each room. Conduit or other provisions shall be installed to permit future use of computer terminals, television and other electronic instructional devices.
- I. Where there are specialized facilities, such as language labs, study carrels, micro-teaching and television, provision should be made for electrical service in the floor.
- J. A projection surface should be permanently installed in each instructional area with provision for eliminating keystoning.
- K. Use of audio devices mandates acoustical treatment of walls, ceilings and floors in instructional areas, media centers and other such areas, particularly in open-type classrooms where many activities are occurring

simultaneously.

L. Carpeting or resilient material.

603 CORRECTIVE/REMEDIAL INSTRUCTIONAL AREAS - Optional

See Chapter 5, Section 503.

603.01 Size

Base preliminary determination of area upon an allotment of 28 to 30 square feet per student. For example: 420 to 450 square feet of floor area should be planned for 15 students in an instructional space. To more accurately determine the area, trial room layouts should be made using scaled templates representing furniture and equipment and scaled floor and wall elevation drawings.

603.02 Design Capacity - 15 students

603.03 Location

- A. Isolation from noisy areas of the building
- B. Close proximity to the media center
- C. Location which will permit easy expansion

603.04 Activities

Speaking, laboratory drills; lecture; group discussion; viewing slides, films and other projected materials; listening to recordings and broadcasts; writing and drawing on chalkboards, desk and/or tables; displaying students' work; storing instructional materials and supplies; demonstrations; and lab activities in mathematics where stations with individual assignments are to be done with manipulative materials.

603.05 Equipment Space and Facilities

- A. Chalkboards, bulletin boards and other display areas - as much as possible, a minimum two-thirds of available wall space
  - 1. Chalkboards and bulletin boards should have map rails installed above
  - 2. The bottom of the display area should be at the eye level of the student when seated
- B. Storage
  - 1. Storage for teacher's personal belongings
  - 2. Storage for teaching aids and supplies
    - a. Closed and open shelving

  - b. 4 drawer filing space
- C. Teacher's combination desk-table and chair
- D. Conference-type tables and chairs
- E. Desirable equipment
  - 1. Rack for storage of periodicals pertaining to subject matter being taught
  - 2. All major types of audiovisual equipment should be readily available within classroom or the nearby media center
- F. Adequate provision for controlling the light level in instructional areas is essential. For efficient use of projection-type materials, the light in the room, particularly in the area of the projection surface, should not exceed one-tenth footcandle.
- G. Duplex service receptacles should be installed on all walls of the instructional space for the use of instructional equipment. Sufficient branch electrical circuits service should be in each room. Conduits should be provided to permit future installation of computer terminals, television and other electronic instructional devices. System conduits should be at least 1 ½ inches in diameter in order to provide for installation of television and other teaching devices as indicated above.
- H. Where there are to be specialized facilities, such as language labs, study carrels, micro-teaching and television, provision should be made for electrical service in the floor.
- I. A projection surface should be permanently installed in each instructional area with provision for eliminating keystoning.
- J. Use of audio devices mandates acoustical treatment of walls, ceilings and floors in instructional areas and media centers, particularly in open-type classrooms where many activities are occurring simultaneously.
- K. Carpeting and/or resilient material

604 ART FACILITIES

Art facilities should accommodate the studio and classroom activities of a full art program. Basic to all activities would be space allotment, natural and artificial light, movable furniture or furnishings, display space, several kinds of storage space, deep sinks with cleanout traps and adequate electrical outlets.

604.01 Size

Studio - approximately 1200 square feet, exclusive of storage.

604.02 Design Capacity

Recommended class size for studio activities - 25 students. For maximum flexibility, the studio should accommodate up to 40 students on occasion.

604.03 Location

A. Accessibility of freight elevator (if not first floor location) for heavy consumable materials such as clay and sculpture media.
B. Need for uncarpeted floor in studio areas. Floors should be of concrete, tile, linoleum or other material not easily damaged by paint or clay.
C. Good lighting, both natural and artificial. Natural light is important for many activities and essential for painting.
D. Space should contain, or be accessible to, facilities for the use of slides and film. Blackout curtains, projection facilities and chairs equipped with tablet arms.
E. Power tools and equipment may, subject to local policy, be borrowed from or shared with Industrial Arts area.
F. Provide power ventilation for removal of fumes, dust, odors and gases from turpentine, lacquer thinners, acids and toxic markers.

604.04 Activities

Discussion, studio, lecture, combination. Basic - drawing, painting, sculpturing, ceramics, design, art, history and appreciation and crafts.

604.05 Equipment Space and Facilities

A. Sink and work counter units
    1. Hot and cold water with mixing faucets
    2. No less than 2 deep sinks of stainless steel with long drainboards
    3. Large drains and cleanout traps
    4. Long counter for mixing paints and other such activities
    5. Storage for mixing pans, water jar and brushes (under sink and counter)
B. Special storage for:
    1. Drawing boards
    2. Shelves for storage of flat work, a minimum of 28 inches x 40 inches
    3. Prints (similar to above)

4. Audiovisual materials and special books
5. Tools used in construction
6. Unfinished work

C. Chalkboard - at least 6 linear feet

D. Bulletin boards - all available wall space (at least one full wall)

E. Display facilities for projects - glass covered in studio and hall

F. Work benches, tilt-top tables and easels, as selected by instructors - movable to permit flexible grouping, with accommodations for:
   1. Teachers' desk and storage area
   2. Provision for hanging mobiles from ceiling
   3. Kilns and potter's wheels. Kiln room - 8 feet x 10 feet is desirable for kiln, clay, glazes, equipment and shelves for work in progress. Adequate electrical circuits, including 220 volts for kiln
   4. Press for graphics

G. Dark room for photography, with mechanical ventilation

H. Doorway opening at least 42 inches wide

I. Duplex outlets along wall spaces and above work county - no less than 12

J. All electric and gas kilns hooded and mechanically ventilated when in use

K. A ceramic kiln co-located with each general art classroom

604.06 Storage Room

Approximately 400 square feet is suggested for each full studio, to include shelves for paper, paints and supplies, and for unfinished work which cannot be stacked, such as wet paints, prints and ceramics, with a special shelf in studio or storage room for unfinished constructions - at least 20 linear feet.

605 DRIVER EDUCATION FACILITIES

Designed to provide a comprehensive course in Driver Education and must include instructional space, laboratory and storage areas.

605.01 Instructional Space

605.011 Size

A minimum of 28 to 30 square feet per student. A room rectangular in shape is essential to adequately accommodate the projection of visual instructional materials and to station the students a minimum distance from the projection screen.

605.012 Design Capacity - 25 students

605.013 Location
For convenience and efficiency, this facility should be located on the ground level so as to permit easy access to automobiles used for behind-the-wheel instruction.

605.014 Activities
Lecture; group discussions; chalkboard presentations; use of psycho-physical testing equipment; viewing slides, transparencies and films; studying charts, cut-aways and models; and testing activities.

605.015 Equipment Space and Facilities

A. Chalkboard
B. Bulletin board
C. Black-out window shades
D. At least 4 electrical outlets
E. Wall rail to suspend charts
F. Teacher's desk and chairs
G. Work table
H. Lower work noise levels in room
I. Prevent transmission of sound to and from other rooms (Consult State Department of Education, Division of Instructional and Student Services, for list of required equipment)
J. Carpet

605.02 Teacher Study and/or Office Room
Teacher's study and instructional space may be joined by a partition for security and accessibility with facilities for counseling students and lesson preparation, and storage space for personal belongings and records.

605.021 Size - 50 to 75 square feet

605.022 Location - Adjoining Instructional Space

605.03 Storage Room

Allow 20 to 25 linear feet of open shelving and 40 to 50 linear feet of closed shelving. Instructional equipment, teaching aids and supplies must be secured to prevent loss and to assure accessibility when needed.

605.04 Laboratory or Simulator Room - Optional

This room should be free of columns which would obstruct the students' vision of the screen.

605.041 Size

Installation of 12 simulator units and the master console requires an absolute minimum area of 38 feet x 25 feet

605.042 Design Capacity - 12 students

605.043 Location

Adjoining driver education instructional space and office storage room with direct access to other areas.

605.044 Equipment Space and Facilities

A. Floor conduit for simulators and master control unit
B. Provide means for darkening room
    1. Black-out shades for windows, if any. Few or no windows are recommended.
    2. Dimmer switch for lighting control
    3. Two-way ceiling switch
C. Electrical outlets along walls supplied with 120 volt, 60 cycle, 15 amp service
D. Sound control is very important
E. Instructor's desk and chair
F. Projection screen 12 feet x 16 feet for 16-place simulator system and 10 feet x 12 feet for 12-place system
G. Storage area - See Chapter 6, Section 605.03
H. Adequate ventilation and temperature control system
I. Should not be painted white, which would result in excessive reflection of light. A pastel shade of paint is recommended.

605.05 Multi-Media (Programmed Instruction) Instructional Space - Optional

This area could also be used for the regular instructional space.

605.051 Size
Approximately 33 feet long and 28 feet wide

605.052 Design Capacity
30 students with special or adapted furniture and the instructor's console. Equipment is available to accommodate larger groups. An increase in class size will require a comparable adjustment in room size.

605.053 Location
Adjacent to driver education area

605.054 Equipment Space and Facilities
A. Floor conduit and master console
B. Provide adequate means for darkening room
C. A minimum of 12 feet distance between students and screen. The screen should not be viewed from more than a 30 degree angle.
D. Electrical current - 120 volt, 80 amp service with 4 - 20 amp breakers
E. Screen - 6 feet x 12 feet

605.06 Multiple-Car Driving Range - Optional
Intelligent planning of a multiple-car facility will provide acres of well-drained area. The surfacing of this area with stone or asphalt requires careful consideration to assure stabilization without undue pavement deterioration due to climatic conditions, nature of the soil base and drainage.

605.07 Planning the Multiple-Car Facility
These plans must include cost considerations, site selection and development, facility design, equipment and instructional plan. Consider use as parking for off-hour athletic or community use.

605.08 Planning Assistance
May be obtained from the West Virginia Department of Education, Division of Research, Technology, and Professional Services, Driver Education Coordinator.

606 FOREIGN LANGUAGE FACILITIES

Factors influencing the type of foreign language facility to be chosen include the type of laboratory facility desired. Laboratory facilities can be an electronic classroom, a language laboratory into which students are scheduled from classes held in general purpose classrooms or general purpose classrooms adapted for foreign language study.

606.01 General Purpose Classrooms Used for Foreign Language

606.011 Size - 28 to 30 square feet per student, exclusive of storage area

606.012 Design Capacity - 25 students

606.013 Location
- A. Isolation from noisy areas of the building
- B. Near the media center

606.014 Activities

Speaking, laboratory drills; group work; reading; chalkboard work; using audiovisual materials; singing; working with tapes and records individually (in carrels) play acting and dancing.

606.015 Equipment Space and Facilities
- A. Chalkboard - minimum of 20 linear feet with display and map rail above
- B. Bulletin board - minimum of 10 linear feet with display and map rail above
- C. Storage
  - 1. Teacher's storage for personal belongings
  - 2. Closed and open shelving - minimum of 24 linear feet of each
  - 3. Tape racks and storage cabinet
  - 4. Record racks and storage cabinet
- D. Teacher's combination desk-table and chair
- E. Conference-type table and chairs
- F. Non-stationary students' desks and chairs, or combination chair-desks
- G. Duplex electrical outlets on all feasible walls
- H. Bookshelving - minimum of 20 linear feet
- I. Provision for darkening room
- J. Movable cart for audiovisual equipment
- K. Tape recorder with jack box and headsets
- L. Carrels for individual work are desirable
- M. Carpeting

N. Wireless laboratory, optional
O. Projection surface

606.02 Electronic Classroom

606.021 Size - 35 square feet per student, exclusive of storage space

606.022 Design Capacity - 25 students
Allow five percent more stations

606.023 Location
Near media center and isolated from noisy areas of building

606.024 Activities
See Chapter 6, Section 606.014

606.025 Equipment Space and Facilities
A. Chalkboard - minimum of 20 linear feet, with display and map rail above
B. Bulletin board - minimum of ten linear feet, with display and map rail above
C. Storage
  1. Storage for teacher's personal belongings
  2. Closed and open shelving - minimum of 24 linear feet of each
  3. Tape racks and storage cabinet
  4. Record racks and storage cabinet
D. Teacher's combination console-desk and chair
E. Conference-type table and chairs
F. Student seating
  1. Stationary tables wired to reproduce sound from console and movable chairs
  2. Overhead wiring on dropable units to reproduce sound from console and combination chair-desks (this type installation needs fewer square feet per student than the stationary tables).
G. Duplex electrical outlets on all feasible walls
H. Bookshelving: minimum of 20 linear feet
I. Provision for darkening room
J. Microphones, one per station
K. Headsets, one per station
L. Carpeting (optional)

M. Projection surface
N. Jack and plug to place sound track from 16 mm projector into classroom sound systems desirable

606.03 Language Laboratory

606.031 Size - 35 square feet per student, exclusive of storage space

606.032 Design Capacity - 25 students
Allow five percent more stations

606.033 Location
In center of, or adjacent to, foreign language classrooms

606.034 Activities
Language laboratory drill and recording

606.035 Equipment Space and Facilities
A. Chalkboard - minimum of 10 linear feet
B. Bulletin board - minimum of 10 linear feet
C. Storage
  1. 4 drawer filing space
  2. Tape storage space
  3. Record storage space
  4. Lockable storage spaces for detachable equipment, such as headset and microphones
D. Teacher's combination console-desk and chair
E. Stationary booths and movable chairs for students
F. Duplex electrical outlets on all walls
G. Headsets, one per station
H. Microphones, one per station
I. Provision for darkening rooms
J. Carpeting (optional)
K. Projection surface

606.04 Teacher Work Area

606.041 Size - Approximately 250 square feet

606.042 Design Capacity - Two Instructors and Several Students

606.043 Location
Opening into language laboratory or classrooms

606.044 Activities

Preparation of tapes, duplication of tapes and records, preparation of instructional materials, small group activities, reading and grading.

606.045 Equipment Space and Facilities

A. Desk and chair per teacher - 1
B. Legal size filing cabinet per teacher - 1
C. Storage for instructors' personal belongings
D. Table or movable cart for audiovisual equipment
E. Conference table and chairs
F. Chalkboard and bulletin board, minimum of 5 linear feet each
G. Storage for instructional aids
H. Soundproof area for recording tapes
I. Telephone, desirable
J. Projection surface
K. Carpet

607 LIBRARY/LEARNING RESOURCE OR MEDIA CENTER

See Chapter 3, Section 303.

608 MUSIC FACILITIES

Factors influencing the location of this complex include: isolation from quiet areas of the building; ease of isolating the area for use during and after school hours; inclusion in the general arts areas with convenient access to the auditorium stage; and direct or convenient access to the out-of-doors. Location of facilities within the suite should provide ease of supervision of all areas. Acoustical treatment should provide proper sonic environment to prevent sound transmission to remainder of the building.

608.01 Music Studio

NOTE: Choral and instrumental studios may be planned as combined facilities. Assistance in design and planning may be obtained from the music specialist of the state Department of Education.

608.011 Size - 30 to 40 square feet per student, with ceiling height of 12 feet.

608.012 Design Capacity - 40 students

608.013 Location
- A. Direct access to instrumental storage
- B. Direct or convenient access to other rooms in the music suite
- C. Isolated as much as possible from quiet areas of the building

608.014 Activities

Conduct instrumental and choral music rehearsals; view slides, films and other projected materials; listen to recorded music; demonstrations of various types of instruments; write or draw on chalkboard and display materials.

608.015 Equipment Space and Facilities
- A. Chalkboard - maximum of 30 linear feet, on front wall of which at least 8 linear feet is etched with staff lines
- B. Bulletin board - 8 to 10 linear feet, located near entrance
- C. Storage for vocal and instrument accessories
    - 1. Wall cabinets for music folders
    - 2. Open shelving for books, tapes, cartridges and record albums; 12 inches deep and 14 inches clear height: 40 linear feet
- D. Folding chairs with folding tablet arms
- E. Music stands
- F. Director's podium
- G. Tape recorder
- H. Conference work table
- I. 3 or more legal size, 4 drawer filing cabinets
- J. Wide door with flush threshold for moving large instruments to and from the studio
- K. 2 or 3 microphone outlets for recording in the studio
- L. Stereo sound reproducing system with a minimum capacity of 40 watts - 20 watts per channel
- M. Piano and bench
- N. Student wardrobe or lockers
- O. Instructor's desk
- P. Availability of audiovisual equipment

608.02 Practice Room - Optional

608.021 Size - 50 to 60 square feet each

608.022 Design Capacity - 2 to 4 students

608.23 Location
- A. Convenient access from other music rooms
- B. Access to instrumental storage without passing through studio
- C. Convenient access from building corridor
- D. Permit ease of supervision

608.24 Activities
Vocal and instrumental practice

608.25 Equipment Space and Facilities
- A. 2 or 3 chairs and music stands
- B. Glazed partition of insulating glass for ease of supervision
- C. Acoustical treatment
- D. Independent, forced ventilation

608.03 Ensemble Instructional Space - Optional
May be part of multi-use choral and instrumental studio

608.031 Size - Approximately 30 square feet per student

608.032 Design Capacity - 8 to 12 students

608.033 Location
- A. Convenient access from other music rooms
- B. Access to instrumental storage without passing through studio
- C. Convenient access from building to corridor
- D. Permit ease of supervision

608.034 Activities
Choral and instrumental practice and small group instruction

608.035 Equipment Space and Facilities
- A. Chalkboard - 16 to 20 linear feet, bulleting board
- B. Glazed partition for ease of supervision
- C. Acoustical treatment
- D. Independent, forced ventilation

- E. Piano and bench
- F. Folding chairs with folding tablet arms
- G. Music stands

608.04 Instructor's Office and Library
May be separate rooms or combination

608.041 Size - Areas as needed - approximately 250 square feet

608.042 Design Capacity - 2 Instructors and 6 students

608.043 Location
- A. Direct or convenient access to other music rooms
- B. Permit ease of supervision of studio and auxiliary rooms

608.044 Equipment Space and Facilities
- A. Instructor's desk and chair
- B. 4 drawer, legal size filing cabinets - 3 to 4
- C. Storage for instructor's personal belongings
- D. Chalkboard and bulletin board - 6 to 8 linear feet each
- E. Conference table and chairs
- F. Storage for printed music, records, tapes and other instructional aids
  - 1. Open shelving - 15 to 20 linear feet
  - 2. Closed shelving - 30 to 40 linear feet
- G. Stereo sound reproducing equipment
- H. Music sorting rack

608.05 Instrument Storage

608.051 Size - Area as needed - approximately 350 square feet

608.052 Storage Shelving
Necessary to accommodate instruments of various sizes

608.053 Temperature
Temperature and humidity are maintained at acceptable levels.

608.06 Robe and Uniform Storage
May be in portable wardrobes or separate rooms; ventilate as needed.

609 PHYSICAL EDUCATION FACILITIES

Factors influencing location include: Isolation from quiet areas of the building; direct access to the outside; and provision for closing off area for after school use.

NOTE: Although less desirable, these facilities may be combined with assembly facilities.

609.01 Gymnasium

609.011 Size
Determination of size is dependent upon physical education spaces to be located. Allow approximately 7000 square feet. Floor area should be marked for various games.

609.012 Design Capacity - Maximum of 35 students at 125 square feet per student

609.013 Location
Convenient access from locker and shower rooms

609.014 Activities
Include soccer, volleyball, basketball, football, softball, folk and square dance, gymnastics and other activities to meet county curriculum. Recommend college-size basketball court (50 feet x 94 feet), plus spectator seating. As a minimum, provide 24 feet ceiling height.

609.015 Equipment Space and Facilities

A. Provisions for using the learning center as 2 or more teaching stations may require canvas-net partition, fold-door partition or mechanical folding walls.
B. Electrical outlets, record player, auxiliary lighting and cleaning equipment; additional special outlets.
C. Forced ventilation
D. Small cases for display purposes - 2 or 3
E. Bulletin board - 12 to 16 linear feet
F. Public Telephone
G. Drinking fountains (angle jet type)
H. Seating to accommodate student body and staff
I. Minimum ceiling height - 24 feet

609.02 Equipment Storage Rooms
At least 2 in each station

609.021 Size - Area for equipment storage - 150 square feet

609.022 Location
When the station is divided into 2, have directly accessible to each teaching station.

609.023 Equipment Space and Facilities
A. Open storage area for items such as standards, vaulting horses and horizontal bars
B. Enclosed storage cabinets for small items of physical education equipment
C. Double doors and flush threshold

609.03 General Storage

609.031 Size - Large enough to store all equipment

609.032 Location
Direct or convenient access to learning station

609.04 Male and Female Locker/Dressing rooms
Physical education and varsity programs

NOTE: Recommend treatment of walls in these areas with epoxied materials to enhance maintenance. Also, quarry tile or similar floor materials.

609.041 Size - Dependent upon manner in which such items as gym clothing, street clothing and towel distribution are handled and the number of students expected to use this facility - 600 to 700 square feet.

609.042 Location
A. Direct or convenient access to leaning station
B. Direct access to outside physical education areas
C. Direct access to building corridor
D. Direct access to body-drying room
E. Permit ease of supervision

609.043 Activities

Dressing for physical education; storing street and gym clothes; informal talks with physical education instructors.

609.044 Equipment Space and Facilities

A. Street clothes lockers dispersed among gym clothes lockers
B. Space for additional lockers
C. Benches adjacent to or between rows of lockers
D. Small toilet room or partitioned area with water closet, lavatory and urinal
E. Forced ventilation
F. Mirrors to accommodate large numbers of students, shelving under each mirror and one full-length mirror
G. Bulletin board near entrance - 4 to 8 linear feet
H. Chalkboard - 6 linear feet
I. Drinking fountain

609.05 Male and Female Shower Rooms

609.051 Size - Approximately 200 square feet

609.052 Location
Access to locker/dressing room only through the body-drying room

609.053 Equipment Space and Facilities

A. Gang showers - 12 to 16
B. Master volume and maximum temperature controls
C. Individual temperature and on-and-off controls
D. Bar soap trays
E. Forced ventilation
F. Floors are of easily cleanable material
G. Floor drains away from normal traffic
H. Hose bibb for hot and cold water
I. Walls of non-absorbent material

NOTE: Individual dressing, drying and showering booths may be provided in female shower area. The number should not exceed 4.

609.06 Male and Female Body-Drying Rooms

609.061 Size - Approximately 100 square feet

609.062 Location

A. Direct access from locker/dressing and shower rooms; entries to require maximum travel distance through drying room

B. Direct or convenient access from varsity locker/dressing room

609.063 Equipment Space and Facilities

A. Stub towel holders

B. Floor drains away from center

C. Forced ventilation

D. Floors are of easily cleanable material

E. Hose bibb for hot and cold water

609.07 Towel Room - Optional

609.071 Size - 50 to 60 square feet

609.072 Location

A. Convenient to the locker/dressing and shower areas

B. Permit ease of supervision from locker/dressing area and instructor's office

609.073 Activities

Temporary storage, distribution and collection of towels.

609.074 Equipment Space and Facilities

A. Shelving to accommodate laundered towels

B. Movable laundry carts to accommodate used towels

C. Dutch door for issuing and receiving towels

609.08 Laundry Area - Optional

609.081 Size - 100 square feet

609.082 Location

Convenient to physical education and dressing rooms or areas

609.083 Activities

Launder and dry gym clothing

609.084 Equipment Space and Facilities

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- A. Washing machine
- B. Vented dryer
- C. Laundry tub
- D. Separate work surface for handling both clean and soiled clothing and equipment

609.09 Instructors' Offices - One for each instructor

609.091 Size - Approximately 100 square feet

609.092 Location
- A. Direct access to locker/dressing room
- B. Direct or convenient access to gymnasium and outdoor physical education areas
- C. Permit ease of supervision of locker/dressing rooms

609.093 Activities
Instructors' showering, toilet and dressing

609.094 Equipment Space and Facilities
- A. Toilet, lavatory and shower
- B. Desk and chair
- C. Conference chairs
- D. 4 drawer filing cabinet
- E. Storage of personal belongings
- F. Book shelving - 10 to 15 linear feet
- G. First aid equipment
- H. Telephone

609.10 Training Area

609.101 Size - Approximately 200 square feet

609.102 Location - Convenient to Locker/Dressing Room

609.103 Activities - Care of body

609.104 Equipment Space and Facilities
- A. Whirlpool hook-up
- B. Rub-down table
- C. Heat lamps
- D. Supply cabinet

609.11 Equipment Storage Room

609.111 Size - Approximately 150 square feet

609.112 Location - Convenient to Locker/Dressing Rooms

609.113 Activities - Uniform and equipment storage

609.12 Optional Spaces

609.121 Wrestling - 42 feet x 42 feet, or 1800 square feet

609.122 Weight Room - 1000 square feet

609.123 Multi-purpose Room - 1600 square feet

609.124 Auxiliary Gymnasium
In schools of more than 1000 student population - 5400 square feet

610 SCIENCE FACILITIES

Items to be considered in locating these facilities are: Ease of access to outdoor science areas; ease of delivery of supplies and materials; and isolation so odors cannot infiltrate the remainder of the building. Facilities may be designed for instruction in single disciplines or in combinations, such as physics-biology, physics general-science and chemistry-biology. Although optional, DC electricity, compressed air and vacuum are desirable inclusions due to the expense of portable units over a series of years.

610.01 Combination Chemistry/Physics Lecture Laboratory

610.011 Size - Base preliminary determination of area on allotment of 50 to 60 square feet per student; approximately 1200 square feet, exclusive of separate storage.

610.012 Design Capacity - 20 students

610.013 Location
A. Direct access to storage and project preparation room
B. Convenient access to other science instructional space laboratories

610.014 Activities

Instruction and demonstration; class-size and small group discussion; viewing films, slides and other projected materials; individual study and research; individual and small group experimentation; and storing of equipment and materials.

610.015 Equipment Space and Facilities

A. Chalkboard - 25 to 35 linear feet; chart and display rail above
   1. Minimum of 40 inches clear height
   2. Major portion on front wall
B. Bulletin board - 10 to 16 linear feet; chart and display rail above
C. Adjustable shelving - 30 linear feet
D. Conference table and chairs
E. Ventilated (portable or fixed) fume hood
   1. Equip with gas, compressed air, AC and DC electricity and water with vacuum breakers
   2. Wide enough for 2 pupils
   3. Easily visible from demonstration area if fixed piece of equipment
F. Instructor's demonstration table, including sink, hot and cold water, gas, AC and DC electricity, compressed air and vacuum
G. Laboratory work space 2½ linear feet per student (may be provided as tables or work counter)
   1. Equip with sink, water, gas AC and DC electricity flush plates and support rods
   2. Individual student storage units
   3. Corrosive-resistant work surface and plumbing
   4. Perimeter location preferred
H. Open shelving for often-used chemicals and other materials
I. Fire extinguisher and blanket
J. Balance cases - 5 to 6
K. Tablet-arm chairs or 2-student work tables and chairs
L. Teacher's desk and chair
M. Facilities for darkening the room
N. Emergency showers
O. Provide main gas shut-off valve for all laboratory equipment

610.02 Chemistry Storage

610.021 Size - Approximately 100 square feet

610.022 Location
A. Direct access from project preparation room
B. Convenient access from instructional space laboratory

610.023 Equipment Space and Facilities
A. 75 to 100 linear feet of adjustable shelving of varied heights and depths
B. Positive, independent ventilation
C. Window between storage area and instructional space
D. Storage of explosive or flammable material and concentrated acids

610.03 Physics Storage Room

610.031 Size - Approximately 100 square feet

610.032 Location
A. Direct access from project preparation room
B. Convenient access from instructional space laboratory

610.033 Equipment Space and Facilities
A. Adjustable shelving of varied heights and depths - 75 to 100 linear feet
B. Maximum closed adjustable shelving

610.04 Project Preparation Room
Optional as a separate room. However, preparation facilities must be provided outside the instructional space laboratory.

610.041 Size - Approximately 200 square feet, if combined with storage - 400 square feet

610.042 Design Capacity - Instruction and approximately 6 students

610.043 Location
A. Direct access from instructional space laboratory and

from building corridor

B. Convenient access from other science facilities located in adjacent portions of the science suite

C. Permit ease of supervision from instructional space laboratories

610.044 Activities

Preparation for demonstrations; storage of projects; individual and small group project work

610.045 Equipment Space and Facilities

A. Maximum work counter space with minimum of 2 sinks

B. Storage units above and below work counter

C. Water, gas, vacuum, compressed air and AC and DC electricity at work counter

D. File cabinet

610.05 Darkroom - optional

610.051 Size - Approximately 100 square feet

610.052 Design Capacity - Instructor and approximately 4 students

610.053 Location

A. Direct access form instructional space laboratory

B. Convenient access to corridor without passage through instructional space laboratory

610.054 Equipment Space and Laboratory

A. Laboratory work counter
  1. Acid-resistant sink, large enough to accommodate three pans
  2. Storage below
  3. Gas, electricity and hot and cold water with vacuum breakers
  4. Safety lights

B. Storage cabinets for photography equipment and materials

C. Warning light with switch near door

D. Adequate ventilation

610.06 Biology and/or General Science Instructional Space Laboratory

610.061 Size - Base preliminary determination of area on allotment of 40 to 45 square feet per student; approximately 800 square feet, exclusive of separate storage room

610.062 Design Capacity - 20 students

610.063 Location

A. Direct access to project preparation room
B. Direct or convenient access to storage and growing room. Growing room facilities may be included in Instructional Space Laboratory.
C. Convenient access to other rooms in the science suite

610.064 Activities

Instruction and demonstrations; class-size and small group discussion; individual and small group experimentation; viewing slides, films and other projected materials; writing or drawing at tables and chalkboards; individual study and research; display of student projects.

610.065 Equipment Space and Facilities

A. Chalkboard - 20 to 30 linear feet with chart and display rail above
    1. Minimum of 40 inches clear height
    2. Major portion of front wall
B. Bulletin board - 10 to 12 linear feet with chart and display rail above
C. Work counter - 40 to 50 linear feet, minimum; and must have student work space to accompany it
    1. 3 to 4 acid-resistant sinks with hot and cold water
    2. Impervious work surface
    3. Gas and electricity
    4. Storage under work counter
    5. Movable aquariums and terrariums
D. Closed shelving - 30 to 40 linear feet, 18 inches deep
E. Open shelving - 15 to 20 linear feet
F. Instructor's demonstration table including sink, hot and cold water, gas and electricity. 2½ linear feet per student may be provided as equivalent student work space, which is not as restrictive as combination desk-chairs.

G. 2 student tables and chairs
H. Teacher's desk and chair
I. Facilities for darkening room
J. Fire extinguisher and blanket
K. Lavatory
L. Provide main gas shut-off valve for all laboratory equipment

610.07 Biology and/or General Science Storage

610.071 Size - Approximately 200 square feet

610.072 Location
A. Direct access from project preparation room
B. Direct or convenient access from instructional space laboratory and growing room

610.073 Equipment Space and Facilities
Maximum varied height and depth adjustable shelving - approximately 100 linear feet.

610.08 Project Preparation Room
May be planned as combination with storage area.

610.081 Size - Approximately 200 square feet

610.082 Design Capacity - Instructor and approximately 6 students

610.083 Location
Direct access from instructional space laboratory and from building corridor.

610.084 Equipment Space and Facilities
A. Acid-resistant work surface with acid-resistant sink, hot and cold water, gas and electricity
B. File cabinet

611 BUSINESS EDUCATION FACILITIES

See Chapter 8, Section 807.

612 CONSUMER/HOMEMAKING FACILITIES

See Chapter 8, Section 805.

613 TECHNOLOGY EDUCATION FACILITIES

See Chapter 8, Section 808.

614 EXCEPTIONAL STUDENTS - INSTRUCTIONAL AREAS

See Chapter 7.

615 MICROCOMPUTER LAB

615.01 Size - 40 to 45 square feet per student

615.02 Design Capacity - 20 students

615.03 Location
Provide sufficient labs for use by each curriculum area. Core group for smaller facilities and one lab for each curriculum area in larger facilities.

615.04 Activities
Integrated use of microcomputer applications in the curriculum.

615.05 Equipment Space and Facilities

A. 20 -30 inches x 48 inches microcomputer work stations
B. 1 - 30 inches x 60 inches server station
C. 4 time-sharing printers
D. Storage cabinets for disks, paper and other materials
E. Teacher's combination desk-table and chair
F. Conference-type table and chairs
G. Chalkboard - 10 linear feet (dustless type dry marker)
H. Bulletin board - 10 linear feet
I. Dedicated electrical power with surge protection for equipment and conduit for interconnection requirements
J. Projection surface
K. Carpeting
L. Lighting with segmented room control. Use of rheostats is recommended for dimming purposes
M. Provision for darkening room
N. Dedicated phone line for telecommunications
O. Because of the equipment specifications, air conditioning is highly recommended

P. Due to the rapid advancement in computer technology, current information must be obtained before design work is completed.

Q. Carpeting, desirable

R. Final technology designs must be approved by the Office of Technology and Information Systems (OTIS) in the State Department of Education prior to final approval by the State Board of Education.

616 AUDITORIUM

Factors influencing the location of the auditorium include: Ground level position easily shut off from other areas of the building, convenient access to music and language arts instructional space and physical education locker/dressing rooms to permit use as stage-dressing rooms and to service drive for the delivery of bulky properties; location which allows community groups to use the facility during school hours without interfering with school activities; and a location which permits planned multiple use of lobby area. Location shall be convenient to public parking facilities. Consider accessibility of pupil toilets for public use and instructional space for coat check areas during after school hours.

616.01 Body of Auditorium

616.011 Size
Dependent upon ultimate seating capacity desired and singular or multiple use of the facility. Approximately 6 square feet will be needed for each seat provided.

616.012 Design Capacity
Design to accommodate at least 1/3 of student enrollment

616.013 Activities
Production and performance of various student plays, concerts and variety shows; performances before student audiences by visiting groups or individuals contributing to the educational program of the school; multiple use of the area for instructional purposes, such as large and small group instruction and distance learning.

616.014 Equipment Space and Facilities

A. Space in front and below auditorium stage for orchestra, band and other activities

B. Acoustical quality so that weak voices of some platform participants may be heard throughout the auditorium with use of sound support system

C. Facilities whereby programs originating in the auditorium may be broadcast throughout the school

D. Sound amplification controls should be located in projection niche or booth

E. Convenience lights arranged and located for partial illumination during performances

F. Light control by multi-way switches convenient to entrances, near stairs to the stage and projection booth

G. Convenience and pilot light circuits should be tied into main light panel for control during productions

H. Duplex electrical outlets, appropriate in number, should be provided

1. Along front of stage apron
2. At rear of the body of the auditorium
3. About 1/3 the distance from the stage to the rear of the auditorium for use with various audiovisual projectors

I. Projection niche (optional) at the rear of the room for use of film projector

J. Speakers for use with projector located in the rear of the seating area

K. See Chapter 5 for equipment necessary for distance learning

616.02 Lobby or Student Commons

616.021 Size
Area as needed to handle anticipated capacity.

616.022 Location
To serve as common lobby for auditorium and gymnasium if facilities are provided in the same unit, or may be used as common lobby with other public service areas.

616.023 Activities
This facility may also serve as a student gathering area.

616.03 Stage

616.031 Size - 1400 to 1600 square feet

616.032 Location

- A. Provide ample wing space on each side of the stage
- B. Access to the stage and building corridor without entering lobby or body of the auditorium

616.033 Equipment Space and Facilities

- A. Apron in front of the main curtain, approximately 8 feet wide, with direct access to the body of the auditorium at each end
- B. Wide double doors with flush threshold opening onto the stage to permit passage of bulky scenery and equipment
- C. Hardwood floor for the apron and the stage, and soft wood floor for backstage and wing areas
- D. Electrical circuits
    1. Border with roundels of 4 different colors
    2. Circuits for adjustable spotlights mounted on at least 2 battens
    3. Flush floor pockets or equivalent mounted in floor behind cyclorama with at least one outlet directly behind proscenium arch on each side
    4. Duplex electrical outlets mounted near floor on walls of stage
    5. Stage work lights (overhead and foot) controlled by multi-way switches at stage entrances
- E. Provide panel for controlling stage and house lights, including beam and spotlights; mount in the ceiling of the auditorium
- F. Light control panel should be designed to avoid overloading of circuits, resulting in dimmer damage, and should be flexible and expansible
- G. Means for mounting 10 to 12 foot roll-up motion picture screen
- H. Microphone outlets to the rear of the proscenium arch and 2 or 3 under the leading edge of the stage apron

616.04 Stage-Crafts-Workshops-Storage

616.041 Size - Approximately 300 square feet

616.042 Location

Direct access to the stage, arranged to prevent noise interference on the stage.

616.043 Activities
Prepare, alter and store materials, such as stage flats and properties; store general purpose equipment used for auditorium programs.

616.044 Equipment Space and Facilities

A. Double doors with flush threshold
B. Work counter approximately 30 inches deep, with storage: Ten linear feet
C. Tool cabinet
D. Sink with hot and cold water
E. Movable storage cabinets for stage properties
F. Electrical outlets on available wall space, including area over work bench
G. Bulletin board - 6 linear feet
H. Storage for flats of various widths, appropriate for height of the proscenium arch
I. Locked storage for grand piano, costumes, stage properties and lighting and projection equipment

617 FOOD SERVICE FACILITIES

See Chapter 3, Section 302.

618 ADMINISTRATIVE AND SERVICE FACILITIES

See Chapter 3, Section 301.

619 ENGINEERING AND CUSTODIAL FACILITIES

See Chapter 12

Chapter 7

EXCEPTIONAL STUDENT EDUCATION

700 EXCEPTIONAL STUDENTS - INSTRUCTIONAL AREAS

Special education programs shall be provided in classrooms that are: situated within the main school facility; located with age-appropriate non-disabled students, and physically comparable to regular education classrooms.

701 PLANNING PROCESS

701.01 Facilities

All facilities designed for special education shall be planned to assist students to function safely with as much mobility as possible and shall be accessible to students with disabilities. The separate class program requires that the student receive instruction from special education teacher(s) for the majority of the school day. The ages of students in this type of program will vary, usually spanning more than one grade level.

701.02 Additional Factors

Additional factors required to conform with the Uniform Federal Accessibility Standards are:

A. Accessibility ramps
B. Safe area for loading and unloading of buses and other means of transportation
C. Toilet rooms, drinking fountains and lavatories that are appropriately equipped
D. Special furniture for wheelchair students to permit easy use
E. Switches, controls, hardware and fire protection systems that are easily used and understood by the exceptional student
F. Food service facilities designed to fit the individual needs of students
G. Non-skid floor covering or carpet
H. Lockable cabinets for securing medications

701.03 Location

Special education classrooms should be easily accessible to cafeteria, library and other central activities. Special education classrooms are situated within the main school facility, located with age-appropriate, non-disabled students, and are physically comparable to regular education classrooms.

702 BEHAVIOR DISORDERS - SEPARATE CLASS

702.01 Size - 600 square feet

702.02 Design Capacity - 8 students

702.03 Location
Should be in an area with a minimum amount of outside distraction, such as traffic or hallway noise, with direct or convenient access to out-of-doors, and within close proximity to existing rest room facilities.

702.04 Equipment Space and Facilities
Should be stationary or heavy.

A. Instructional Center
  1. Teacher's desk and chair
  2. 8 desks and chairs or combination desk-chairs, adjustable in height
  3. 2 or 3 round or rectangular work tables with chairs for student seating
  4. Minimum of 3 individual learning carrels
  5. Teacher aide's desk and chair

B. Storage
  1. 2 metal storage lockers
  2. One 4 drawer file with lock
  3. 30 linear feet of open shelving
  4. Cart for audiovisual equipment
  5. Coat rack or locker available

C. Chalkboard - 30 linear feet; display and map rail above

D. Bulletin board - 20 linear feet

E. Covered and grounded electrical receptacles located on all walls

F. Carpeting

G. Movable, designed to be secured, screens - for making 2 or 3 study cubicles

H. "Time-out" room - 64 to 100 square feet as described in the student's Individualized Education Program (IEP)
  1. Means of monitoring, auditorially and visually (ie., two-way vision)
  2. One bench or chair

        3. Remove all locks
    I. Phonograph - 1
    J. Tape Recorder - available
    K. Typewriter - available
    L. Intercom - ideally, two-way intercom unit connected to administrative offices
    M. Computer - available
    N. Capability of darkening room
    O. Clock
    P. Availability of audiovisual equipment
    Q. Computer and work stations - available

703 COMMUNICATION DISORDERS - SEPARATE CLASS

703.01 Size - 600 to 800 square feet

703.02 Design Capacity - 12 students

703.03 Location
Refer to Chapter 7, Section 701.03

703.04 Equipment Space and Facilities
- A. Instructional Center
    1. 2 office desks and 3 adult chairs
    2. Large table (5 feet)
    3. 8 to 10 chairs for students
    4. Student desk and chairs
    5. Set swastika style carrels
    6. Movable screen covered with sound absorbing material
- B. Storage
    1. 4 drawer file with lock - 1
    2. Cart for audiovisual equipment - 1
- C. Lighting, artificial - 60 to 75 foot candles
- D. Lighting, natural - at least one window with drapes
- E. Acoustical treatment - acoustical treatment of ceilings, doors and walls; ideally, draped; carpeted floors
- F. Electrical power supply: 110 volt duplex receptacle on each wall
- G. Intercom - ideally, intercom unit connected to administrative offices; telephone would suffice
- H. Chalkboard - 3 feet x 5 feet, mounted on wall at appropriate height for students

- I. Bulletin Board - 3 feet x 5 feet, mounted to wall
- J. Full mirror which enables 3 to 5 children to work in front of it
- K. Audiometer - properly calibrated, portable audiometer available
- L. Auditory training equipment: Individual amplification units according to need
- M. Tape recorder - assigned for exclusive use of clinician
- N. Phonograph - three speed phonograph available in building
- O. Language master - assigned for exclusive use of clinician
- P. Typewriter - made available
- Q. Clock
- R. Carpeting
- S. Closed-shelf storage bin
- T. Computer and work stations - available

704 DEAF - BLIND - SEPARATE CLASS

704.01 Size - 300 to 500 square feet

704.02 Design Capacity - 3 students

704.03 Location
See Chapter 7, Section 701.03

704.04 Equipment Space and Facilities

- A. Instructional Center
  - 1. Teacher's desk and chair
  - 2. 2 library tables with 3 chairs each, or seating arrangements appropriate to the concomitant physical handicaps
- B. Storage (may be common resource area)
  - 1. One cart for audiovisual material
  - 2. One storage locker, recessed if possible. This locker should be of sufficient size to hold braille writer, closed circuit television, typewriter, large print books and talking book machines
  - 3. One desk-high file with lock
  - 4. Open shelving - 40 linear feet
- C. Illumination - the room should be free from glare and direct sunlight. Artificial illumination fixtures should be wired for independent control.
- D. Wall Surfaces - colors should be chosen in a range of pastel shades; surfaces should have a dull finish and be easily

washable.

E. Chalkboard - gray or gray-green in color; 4 linear feet; display and map rial above, or as appropriate to the program

F. Bulletin board - 4 linear feet, or as appropriate to the program

G. Tape recorder and listening station

H. Covered and grounded electrical receptacles located on all walls

I. Carpeting - solid color

J. Sink with hot and cold water

K. Typewriter - primary type - available

L. Projection and magnifying equipment - available

M. Toilet

N. Electrical power supply - 3 on each wall

O. Braille writer and other special equipment, as appropriate

P. Computer and work stations - available

705 MILD MENTALLY IMPAIRED - SEPARATE CLASS

705.01 Size - 600 to 750 square feet

705.02 Design Capacity - Maximum of 12 students

705.03 Location
See Chapter 7, Section 701.03

705.04 Equipment Space and Facilities

A. Instructional center
  1. Teacher's desk and chair
  2. Teacher aide's desk and chair
  3. 12 desks and chairs, or combination desk-chairs, adjustable in height
  4. 2 library tables with 6 chairs for each

B. Storage
  1. Cart for audiovisual material - 1
  2. Metal storage lockers - 2
  3. Desk-high file - 1
  4. 4 drawer file with lock - 1
  5. 20 linear feet of open shelving

C. Full length mirror - should be designed to be covered

D. Chalkboard - 24 linear feet; display and map rail above

E. Bulletin board - as much as possible, minimum of 20 linear

150

feet

F. Covered and grounded electrical receptacles located on all walls
G. Sink with hot and cold water
H. Fire extinguisher and blanket
I. Phonograph
J. Tape recorder - available
K. Clock
L. Typewriter - available
M. Carpeting
N. Audiovisual equipment should be available
O. Access to instructional areas/equipment conducive to teaching functional skills
P. Computer and work stations - available

706 MODERATE MENTALLY IMPAIRED - SEPARATE CLASS

706.01 Size - 650 to 850 square feet

706.02 Design Capacity - maximum of 12 students

706.03 Location
See Chapter 7, Section 701.03

706.04 Equipment Space and Facilities
A. Instructional center
   1. Teacher's desk and chair
   2. Teacher aide's desk and chair
   3. 12 desks and chairs or combination desk-chairs, adjustable in height
   4. 2 library tables with 6 chairs for each table
B. Storage
   1. Cart for audiovisual material
   2. 2 metal storage lockers
   3. 4 drawer file with lock
   4. 20 linear feet of open shelving
C. Chalkboard - 20 linear feet; display and map rail above
D. Bulletin board - as much as possible; minimum 20 linear feet
E. Facilities for darkening room
F. Electrical receptacles with protective covers on all walls
G. Sink with hot and cold water
H. Phonograph
I. Tape recorder - available

J. Clock
K. Typewriter - available
L. Carpeting
M. Toilet
N. Instructional areas/equipment conducive to teaching functional skills (ie., kitchen facilities, laundry facilities and bathing facilities)
O. Doorways that are 3½ feet wide and without thresholds
P. Full length mirror - should be designed to be covered
Q. Computer and work stations - available

707 ORTHOPEDICALLY IMPAIRED - SEPARATE CLASS

707.01 Size - 800 to 1000 square feet

707.02 Location
Direct or convenient access to out of doors. See Chapter 7, Section 701.03.

707.03 Design Capacity - 10 students

707.04 Equipment Space and Facilities
A. Teacher's desk and chair
B. Teacher aide's desk and chair
C. Individual wheelchair cut-out tables for each student, where appropriate; 2 five foot round tables; some chairs depending on needs
D. Storage
    1. Cart for audiovisual material
    2. 2 metal storage lockers
    3. 4 drawer file with lock
    4. 30 linear feet of open shelving
    5. Adequate storage space for specialized equipment as required by the student's Individualized Education Program (IEP)
E. Restroom facilities (bathtub, sink, toilet) to conform with the Uniform Federal Accessibility Standards (UFAS)
F. Doorways that are 3½ feet wide and without threshold
G. Ramps and handrails, if needed
H. Non-skid floor surfaces
I. Electrical receptacles with protective covers on all walls
J. Wheelchair-accessible sink with hot and cold water
K. Washer and dryer

L. Student changing area
M. Range and refrigerator, when appropriate
N. Convenient access to lunchroom suitable to the individual needs of students
O. Chalkboard - 40 linear feet, display and map rail above
P. Bulletin board - as much as possible; minimum 20 linear feet
Q. Carpeting
R. Phonograph
S. Tape recorder - available
T. Clock
U. Typewriter - available
V. Computer and work stations - available

708 SEVERE/PROFOUND MENTALLY IMPAIRED - SEPARATE CLASS

708.01 Size - 800 to 1000 square feet

708.02 Design Capacity - 9 students

708.03 Location
See Chapter 7, Section 701.03

708.04 Equipment Space and Facilities
A. Instructional Center
  1. Teacher's desk and chair
  2. 9 desks and chairs or combination desk-chairs, adjustable in height
  3. 2 or 3 round or rectangular work tables with chairs for student seating
B. Storage
  1. Metal storage lockers - 2
  2. 4 drawer file with lock
  3. 30 linear feet of open shelving
  4. Adequate storage space for specialized equipment as required by the student's IEP
  5. Cart for audiovisual equipment - 1
C. Chalkboard - 30 linear feet; display and map rail above
D. Bulletin board - 20 linear feet
E. Covered and grounded electrical receptacles located on all walls
F. Full length mirror, designed to be covered
G. Carpeting
H. Non-skid floor surface

I. Movable screens which can be secured for making 2 or 3 study cubicles
J. "Time-out" room - 64 to 100 square feet, as described in the student's IEP
   1. Bench or chair
   2. Means for monitoring audibly and visibly (ie., 2-way mirror)
   3. Removal of existing locks
   4. Free from objects, materials and equipment
K. Phonograph
L. Tape recorder - available
M. Instructional areas/facilities to promote the teaching of functional skills, ie., stove, refrigerator, washer, dryer
N. Typewriter - available
O. Range
P. Doorways that are 3½ feet wide and without thresholds
Q. Specialized equipment as required by the student's IEP
R. Computer and work stations - available

709 DEAF AND HARD OF HEARING - SEPARATE CLASS

709.01 Size - 600 to 750 square feet

709.02 Design Capacity - 10 students

709.03 Location

Should be located out of close proximity to high noise level areas (ie., gymnasiums, rhythm rooms, shops, noisy streets, railroad tracks and airports). Baffle of trees, embankments and/or turf should lie between building and possible noise sources. See Chapter 7, Section 701.03.

709.04 Equipment Space and Facilities

A. Housing structure
   1. Walls of brick, 4½ inches thick, plastered on both sides
   2. Combination cork/peg boards - one wall
   3. Doors, solid-core type (air gaps sealed with rubber edging stripe)
   4. Windowless or partially windowless (double pane) classroom
   5. Ventilation system that causes little noise (ducts can be baffled and lined)

6. Toilet equipment should be silent in operation and accessible to students with disabilities
7. Minimum of 18 linear feet of chalkboard (natural slate or dark green) - magnetic chalkboards are optional
8. Sink, with counter area and storage for books
9. Closets (walk-in type)
10. Space to house amplification equipment, audiovisual arts, and storage for books

B. Acoustic considerations
   1. Installation of wall-to-wall carpeting
   2. Acoustical plaster and tile, (appropriate amounts on walls and ceilings)
   3. Drapes
   4. Sound levels of 30 to 35 db on the A scale of a sound level meter measured in the empty classroom with normal activity in adjacent areas. The signal-to-noise ratio in the occupied classroom is to be 20 to 30 db for optimal speech discrimination opportunities.

C. Instructional Center
   1. Teacher's desk and chair
   2. Students desks/chairs
   3. Round table - 5 foot
   4. Set of swastika style carrels for individualized instruction
   5. Movable screen covered with sound absorbing material

D. Lighting
   1. Controls in teaching area
   2. Incandescent lighting - 150 footcandles
   3. Projections shades for windows

E. Electrical power supply - 2 to 3 plugs on each wall; grounded system

F. Equipment
   1. FM system with individual aids for each student; loop installation
   2. 16 and 35 mm projector, available
   3. Slide projector, available
   4. Language master, available
   5. Opaque and overhead projectors
   6. Portable VCR, camera, film and playback/monitor system
   7. Tape recorder
   8. Record player

9. 4 drawer file cabinets with locks
10. Speech mirror - portable, at least 2 feet x 1 foot
11. Visual fire safety signals
12. Full length mirror
13. Telephone trainer unit with teletype device for the deaf

G. Observation room equipped with amplification system, lock and one-way glass (entrance outside of classroom)

H. Computer and work stations - available

710 BLIND AND PARTIALLY SIGHTED - SEPARATE CLASS

710.01 Size - 600 to 750 square feet

710.02 Design Capacity - 10 students

710.03 Location
See Chapter 7, Section 701.03

710.04 Equipment Space and Facilities

A. Instructional Center
   1. Teacher's desk and chair
   2. Teacher aide's desk and chair
   3. Desks and chairs or combination desk-chair, movable and adjustable in height; of light neutral color and with a dull finish
   4. 2 library tables with 3 chairs each

B. Storage
   1. Cart for audiovisual material
   2. Storage locker, recessed if possible. This locker should be of sufficient size to hold: braille writer, closed circuit television, typewriter, large print books and talking book machines (may be storage closet).
   3. 4-drawer file with lock, recessed if possible
   4. Desk-high file
   5. Open shelving - 40 linear feet

C. Illumination - the room should be free from glare and direct sunlight. Artificial illumination fixtures should be wired for independent control.

D. Environment must be barrier free in order to be conducive to physical mobility of students.

E. Facilities and equipment conducive to active physical education program shall be available.

F. Low-vision aids or other mechanical and/or electronic aids (ie., braille writer, closed circuit television, talking computer)
G. Wall surfaces - colors should be chosen in a range of pastel shades; surfaces should have a dull finish and be easily washable.
H. Chalkboard - gray or gray-green in color; 20 linear feet; display and map rail above
I. Bulletin board - 20 linear feet
J. Tape recorder and listening station
K. Electrical power source, 2 or 3 on each wall - covered and grounded
L. Carpeting - solid dark color
M. Sink with hot and cold water
N. Typewriters - 2 primary type
O. Projection and magnifying equipment - available
P. Tangible apparatus - braillers, talking book machines, reading stands and racks and relief globes
Q. Toilet
R. Computer and work stations - available

711 SPECIFIC LEARNING DISABILITIES - SEPARATE CLASS

711.01 Size - 540 square feet

711.02 Design Capacity - maximum of 12 students

711.03 Location
See Chapter 7, Section 701.03

711.04 Equipment Space and Facilities
A. Instructional Center
  1. Teacher's desk and chair
  2. Teacher aide's desk and chair
  3. Desks and chairs or combination desk-chairs, adjustable in height - 8
  4. 2 library tables with 4 chairs for each
  5. Minimum of 4 individual learning stations
B. Storage
  1. Cart to use for audiovisual materials
  2. Metal storage lockers - 2
  3. Desk-high file with lock
  4. 4 drawer file with lock
  5. Open shelving - 30 linear feet

C. Chalkboard - 30 linear feet; display and map rail above
D. Bulletin board - minimum 20 linear feet
E. Movable screens - 2 or 3, 5 feet x 6 feet
F. Covered and grounded electrical receptacles located on walls
G. Phonograph
H. Tape recorder
I. Clock
J. Computers and work stations - available
K. Audio card readers - 2
L. Overhead projector
M. Instructional television
N. Filmstrip projector - available
O. Painting easel - 2
P. Projector and screen - available

712 PRE-SCHOOL - SEPARATE CLASS

712.01 Size - 600 to 800 square feet

712.02 Design Capacity - 10 students

712.03 Location
See Chapter 7, Section 701.03.

712.04 Equipment Space and Facilities
A. Teacher's desks and chairs, one each for teacher and aide
B. 2 tables with chairs for pupil seating; carpet squares or low cushions for additional seating per child
C. Storage
    1. Cart for audiovisual material
    2. Storage cabinets
    3. 4 drawer file with lock
    4. 20 linear feet of shelving adjacent to instructional area
D. Restroom facilities (including changing table and cots) to conform with Vocational Rehabilitation requirements
E. Doorways that are 3½ feet wide and without threshold
F. Ramps and handrails, if needed
G. Non-skid floor surfaces
H. Electrical receptacles with protective covers on all walls
I. Sink with hot and cold water
J. Chalkboard - 30 linear feet

K. Bulletin board - as much as possible; minimum 20 linear feet
L. Facilities for darkening room
M. Carpeted Area
N. Phonograph - available
O. Tape recorder - available
P. Clock
Q. Typewriter - available
R. Projector and screen - available
S. Instructional television - available
T. VCR - available
U. Computer and work stations - available

713 GIFTED EDUCATION - SEPARATE CLASS

713.01 Size 600 to 750 square feet

713.02 Design Capacity - 15 students

713.03 Location
See Chapter 7, Section 701.03

713.04 Activities
Individuals and groups engaging in study and work activities; experimentation; problem solving situations; and such activities as using educational media aids and technology, using a variety of reference materials, developing cultural skills and displaying student's work.

713.05 Equipment Space and Facilities
Ample space, movable furniture and equipment and well-designed storage areas are essential.

A. Chalkboards, bulleting boards and other display areas: As much as possible; a minimum two-thirds of available wall space
    1. Chalkboards and bulletin boards should have map rails installed above.
    2. The bottom of the display area should be at the eye level of the student when seated.
B. Student wardrobe - accessible
C. Storage space
    1. Open and closed adjustable shelving of various heights and depths for a variety of sizes of construction paper, charts and large format books -

30 linear feet of each
    2. Storage for teacher's personal belongings
    3. Filing space for instructional material and supplies equivalent to two 4 drawer, legal size file cabinets
- D. Work space - 2 square feet per student with shelving beneath. Sink equipped with mud trap and hot and cold water.
- E. Teacher's combination desk-table and chair
- F. 2 conference-type tables and chairs
- G. Desks and chairs, or combination chair-desk
- H. Computers and work stations - available
- I. Electrical receptacles located on all walls, covered and grounded
- J. A minimum of 1 movable screen
- K. Clock
- L. Phonograph

714 REGULAR EDUCATION - PART TIME

714.01 Size - 500 to 600 square feet

714.02 Design Capacity - 15 students

714.03 Location
See Chapter 7, Section 701.03

714.04 Equipment Space and Facilities
- A. Instructional center
    1. Teacher's desk and chair
    2. Student desks and chairs or combination desk-chairs, adjustable in height
    3. Library table with 8 chairs
    4. Typing stand and typewriter
- B. Storage
    1. Cart for audiovisual material
    2. Metal storage locker
    3. Desk-high file with lock
    4. 4 drawer files with lock - 2
    5. 20 linear feet of closed and open shelving
- C. Full length mirror designed to be covered
- D. Chalkboard - 20 linear feet; display and map rail above
- E. Bulletin board - as much as possible; minimum 20 linear feet
- F. Covered and grounded electrical receptacles located on all

walls

G. Classroom (including equipment and facilities) must be modified in order to accommodate student needs as specified in the IEP.

H. Computers and work stations - available

715 PROFESSIONAL SUPPORT STAFF

Services provided by professional support staff, such as school psychologists, counselors, audiologists, speech/language pathologists and related service specialists may provide itinerant or full-time services to the students. If itinerant services are provided, areas of the school may be used by professional support staff on a part-time basis with adequate spaces being made available. Those services which are provided on a full-time basis require an individual full-time room assignment.

715.01 Size 250 to 350 square feet

715.02 Design Capacity - Maximum of 10 students and, in some cases, parents

715.03 Location
See Chapter 7, Section 701.03

715.04 Activities
Individual and group guidance; counseling and conferences with pupils, parents and teachers; individual evaluations; individual and group instruction.

715.05 Equipment Space and Facilities

A. Desk and chair
B. Conference chairs
C. Shelving - 10 to 15 linear feet
D. Bulletin board - 4 to 6 linear feet
E. Chalkboard - 4 to 6 linear feet
F. Storage for personal belongings
G. 4 drawer file cabinet with lock for each professional assigned full-time to facility
H. Additional file space for other professionals providing itinerant services
I. Professional support staff facilities, including equipment, must be modified in order to accommodate student needs as specified in the individualized education program

J. Telephone with one or more outside lines
K. Computer and work stations - available

Chapter 8

800 VOCATIONAL EDUCATION FACILITIES

When planning facilities of a service area program for Vocational-Technical Education, refer to the Division of Technical and Adult Education Services, Handbook on Planning School Facilities Vocational Education Supplement. The assistance of specialists in agricultural education should be secured in planning facilities.

801 AGRICULTURAL EDUCATION FACILITIES

Factors influencing the location of facilities include: Isolation from quiet areas of the building; location which provides easy delivery of instructional supplies, materials and equipment including farm machinery; location which permits isolation from remainder of the building for after school use.

801.01 Classroom Space

801.011 Size
Base preliminary determination of area upon allotment of 30 to 40 square feet per student (minimum of 600 square feet), exclusive of storage space. If classroom space is based on the minimum of 30 square feet per student (600 square feet total), an additional 200 square feet should be provided for a demonstration and work area - wet sink, etc.

801.012 Design Capacity - 20 students

801.013 Location
A. Convenient or direct access to shop and office
C. Ground floor, convenient to a building entrance

801.014 Activities
Lecture; demonstration; experimentation; discussion; viewing slides, films and other projected materials; writing or drawing on chalkboard and tables; displaying students' work; storing instructional materials and supplies.

801.015 Equipment Space and Facilities
A. Chalkboard - 20 to 24 linear feet; display and chart rail above
B. Bulletin board - as much as possible; minimum 8

linear feet; height 4 feet; display and chart rail above. Locate one section adjacent to entrance.

C. Student tables (minimum of 10 - 24 inches x 60 inches x 30 inches) and chairs
D. Teacher's desk and chair
E. Demonstration lab table with wet sink, gas and electric - 24 inches x 60 inches x 36 inches
F. Storage
  1. Magazine rack
  2. Minimum of 40 linear feet of adjustable shelving
  3. Record book holder
G. Duplex electrical outlets on all walls
H. Facilities for light control to permit use of visual aid
I. Refer to the "Agricultural Education Program Guide" for list of equipment

801.02 Agricultural Mechanics Laboratory

801.021 Size
Minimum of 2400 square feet. Base preliminary determination of area on allotment of 120 to 150 square feet per student, exclusive of storage and tool room space.

801.022 Design Capacity - 20 students

801.023 Location
A. Convenient access to classroom space and instructor's office
B. Direct access to service drive

801.024 Activities
Construct and repair agricultural equipment and machinery; weld; finish and paint equipment; operate power machinery or equipment; store tools, materials and partially completed projects.

801.025 Equipment Space and Facilities
A. Varies with program offered in shop
B. Chalkboard and bulletin board - 6 linear feet each
C. Windows should be at least 42 inches above the floor to permit installation of equipment along wall and electrical outlets above work benches

D. Floor or ceiling electrical grid system for 110 and 220 volt power to various machines with master control switches
E. Overhead door from service drive, minimum 14 feet wide and 10 feet high
F. Storage for hand tools, may be provided in separate room or in cabinets and racks within the lab
G. Fire extinguishers, per State Fire Code
H. Work benches, wooden, minimum of 30 linear feet
I. Work benches, metal, minimum of 40 linear feet
J. Floor drain near machinery repair area
K. Half-circle wash fountain installed in shop
L. Emergency eye wash
M. Refer to the "Agricultural Education Program Guide" for list of equipment

801.03 Agricultural Mechanics Storage Area

801.031 Size - minimum of 600 square feet

801.032 Location
A. Adjacent to the laboratory area and machinery storage area
B. Area should be protected from the weather, but not necessarily heated

801.033 Activities
Storage of instructional materials and consumables

801.034 Facilities
A. Storage rack for metal
B. Storage rack for lumber

801.04 Machinery and Material Storage Area

801.041 Size - minimum of 600 square feet

801.042 Location
Adjacent to the lab with direct access through the overhead lab door

801.043 Equipment Space and Facilities
A. Macadam base sloped for drainage

B. Surrounded by chain link fence at least 7 feet high
C. Double gate entrance, minimum of 14 feet wide

801.05 Greenhouse

801.051 Size - minimum of 22 feet x 48 feet

801.052 Location
Convenient access to other program facilities

801.06 Instructor's Office and Storage Area

801.061 Size - minimum of 200 square feet

801.062 Location
Convenient or direct access to shop and classroom area

801.063 Equipment Space and Facilities
A. Teacher's desk and chair
B. 1 or 2 conference chair
C. Storage
    1. Letter size, 4 drawer file cabinet
    2. Legal size, 4 drawer file cabinets, minimum of 2
    3. Adjustable shelving of various heights and depths
D. Minimum of 2 duplex electrical outlets

802 MARKETING EDUCATION FACILITIES

802.01 Instructional Space

802.011 Size
The size of the facility is driven by the curriculum. The Marketing Education curriculum calls for small group work areas, project areas, and regular classroom instruction space. The suggested average space is 40 - 45 square feet per student (1000 - 1125 square feet).

802.012 Design Capacity - 25 students

802.013 Location
The most desirable location for a facility will be found along

a main corridor receiving maximum student exposure.

802.014 Activities

Learning activities will include role playing; realistic job situations; demonstrating job related skills; observing and evaluating films; job activities and processes; independent study in an area; panel presentations and discussions; and conferences.

802.015 Equipment Space and Facilities

A. Trapezoid-shaped tables with chairs
B. Chalkboards and bulletin boards
C. Exterior display window
D. File cabinet
E. Electronic cash register with counter
F. Calculators, 1 per student, per class
G. Teacher desk and chair
H. Bookcase
I. Mannequins - 1 or 2
J. Bookcase
K. Microcomputer
L. Refer to the "Cooperative Education Administrative Handbook" for list of additional equipment

802.02 Office

802.021 Size

Because of the Marketing Education teachers' daily contact with the business community, an office connected to the classroom is necessary. This office should be 200-250 square feet and should accommodate 1 - 2 teachers. A clear window or partition should separate the office from the classroom.

802.022 Location

Direct or convenient access to instructional space

802.023 Equipment Space and Facilities

A. Teacher's desk and chair
B. Telephone
C. Conference chairs - 1 or 2
D. Computer with printer
E. Letter size 4 drawer file cabinets - 2

F. 20 to 30 linear feet of shelving, open or closed
G. Plain paper copier
H. Refer to the "Cooperative Education Administrative Handbook"

802.03 Storage

802.031 Size
A storage closet of at least 100 square feet should be attached to the classroom. Some shelving should be built in.

802.032 Location
Direct or convenient access to instructional space or school store

802.033 Equipment Space and Facilities
Adjustable shelving throughout

802.04 School Store

802.041 Size
If a retail lab is part of the marketing education program, spaces from 150 square feet to 1500 square feet can be utilized, depending on the type of store and planned operation. Contact the state Supervisor for Marketing Education for assistance in planning a school store.

802.042 Location
The most successful location would be on a high traffic corridor, attached to the marketing education classroom and office.

802.043 Equipment Space and Facilities
Contact the state Supervisor for Marketing Education for specs.

802.044 Activities
Stock and operate a retail enterprise, selling items identified as appropriate by school survey and the administration, teacher and advisory committee.

803 DIVERSIFIED COOPERATIVE TRAINING FACILITIES

803.01 Instructional Space

803.011 Size
The size of this facility will be dependent upon the type of furniture and equipment contained; 30 to 35 square feet per student.

803.012 Design Capacity - 25 students

803.013 Location
The most desirable location for a facility will usually be found along a main floor corridor receiving maximum student exposure.

803.014 Activities
Learning activities will include role playing; realistic job situations; demonstrating job related skills; observing and evaluating films; job activities and processes; independent study in an area; panel presentations; and discussions and conferences.

803.015 Equipment Space and Facilities

A. Tables and chairs
B. Bulletin boards and chalkboards
C. File cabinets
D. Calculators
E. Telephone
F. Storage cabinet
G. Typewriter
H. Teacher's desk and chair
I. Bookcase
J. Microcomputer
K. Refer to the "Cooperative Education Administrative Handbook" for list of additional equipment

804 VOCATIONAL HEALTH OCCUPATIONS FACILITIES

One factor influencing the location of the facilities would be whether the location permits parking and easy access for bus and auto transportation to clinical facilities.

804.01 Instructional Space

804.011 Size
Base preliminary determination of area upon allotment of 25 to 30 square feet per student.

NOTE: If classroom/laboratory area is combined, need 75 to 100 square feet per student.

804.012 Design Capacity - 25 students/classroom

804.013 Location
Convenient to laboratory and office.

804.014 Activities
Lecture; large and small group discussion; independent study; utilization of audiovisuals; chalkboard demonstrations; role playing and similar learning strategies.

804.015 Equipment Space and Facilities

A. Chalkboard - 8 to 12 linear feet
B. Bulletin board - 4 feet by 4 feet
C. Student chairs with arm rests, or 30 inches x 60 inches library tables and chairs
D. Teacher's desk and chair
E. Equipped simulation/patient care units with provision for privacy. If the instructional space/laboratory area is combined, a demonstration unit is not needed.
F. Storage
    1. Legal size, 4 drawer file cabinet
    2. Magazine rack
    3. Adjustable shelving
    4. Cabinet storage areas
    5. Open shelves within classroom
G. Electrical outlets to permit use of equipment at demonstration unit and for small or large group viewing of audiovisuals
H. Provisions for light control to permit use of visual aids
I. Sink with hot water
J. Fire extinguisher (per state Fire Code)
K. Refer to the "Health Occupations Program Guide" for list of equipment for specific programs.

804.02 Health Occupations Laboratory

804.021 Size

Base preliminary determination of area on allotment of 75 to 100 square feet per student in the following occupational areas.

A. Dental assistant
B. Practical nursing
C. Health assistant
D. Nursing assistant
E. Medical assistant
F. Medical lab assistant
G. Dental lab assistant
H. Respiratory therapy technician
I. Pharmacy technician
J. Medical transcriptionist
K. Surgical technician

NOTE: The assistance of specialists in health careers and health occupations should be secured in planning these facilities.

804.022 Design Capacity - 25 students/lab

804.023 Location

A. Convenient access to instructional space and instructor's office
B. Provision for room privacy during patient care/simulation procedures

804.024 Activities

Learning experiences in patient care and recording, dental/medical office procedures and related activities, depending upon health occupation being taught.

804.025 Equipment Space and Facilities

A. Equipment should be comparable to that used in the health occupation field.
B. The equipment and work stations will vary with the occupational objectives of the program.
C. Windows should be high enough to permit installation of equipment along the wall.
D. Consultation should be made with Vocational Health Occupations Education Supervisor for equipment needs of various occupational areas.

E. Sink and lavatory should have hot and cold water.
F. Counter top should have work space with cabinet storage.
G. Storage room should have locked storage for visual aids, equipment and supplies.
H. Equipment supplied should include dressing room and student lockers.
I. Refer to the "Health Occupations Program Guide" for list of equipment.

804.03 Instructor's Office/Station

804.031 Size - 100 to 150 square feet

804.032 Location
Direct access to the laboratory, instructional space and corridor.

804.033 Equipment Space and Facilities
A. Teacher's desk and chair
B. Conference chairs - 2
C. 4 drawer file cabinet with lock
D. Mirror

804.04 Resource/Study Area

804.041 Size - 225 square feet

804.042 Location
Can be separate room or can be part of laboratory.

804.043 Equipment and Facilities
A. Round tables or library tables with 10 chairs each - 2
B. Bookshelves or bookcases along walls
C. Storage cabinets for visual aids and independent study materials
D. Bookkeeping drawer and forms for book borrowing
E. Magazine display rack for journals, pamphlets, periodicals and other materials

805 HOME ECONOMICS FACILITIES - GRADES 9-12

Consumer and homemaking education is a group of home economics instructional programs that prepare individuals at all educational levels for the occupation of homemaking, emphasizing the acquisition of knowledge and the development of understanding attitudes, standards, values, and skills relevant to individual and family life as well as the world of work. They also emphasize the improvement of the home and the quality of individual and family life ane enhance potential employability. These programs prepare individuals for the multiple roles of homemaker and wage earner. Programs include, but are not limited to, instruction in consumer education, food and nutrition, family living and parenthood education, child growth and development, health and safety, housing and home management (including resource management) and clothing and textiles. Course offerings include: Adult Roles and Functions; Steps, Parenting; and/or special interest courses.

805.01 Consumer and Homemaking Instructional Space

805.011 Size

The home economics facility consists of 1 or more rooms. Regardless of the number of rooms, space is provided for carrying out a comprehensive curriculum. In small high schools, a single room with 1 teacher is used for teaching all aspects of the curriculum. If more than one teacher is currently employed, or if it is anticipated that in the near future more than one teacher will be needed, sufficient rooms are included in the original plan for meeting needs. Regardless of the number of rooms in a facility, each room is used for teaching more than one area of consumer and homemaking instruction.

A. One all-purpose room shall be designed for a 1-teacher department. Space and equipment for teaching textiles and clothing, nutrition and foods, housing/home furnishings, parenting and child development, family living, management and consumer education. The total amount of space needed is 95-100 square feet per student and is designed to include the following areas:

1. Foods laboratory - 45 square feet per student (minimum of 900 total square feet). See Chapter 8, Section 805.021 for specialized equipment and facilities requirements.
2. Clothing laboratory/multi-purpose room - 50 square feet per student (minimum 1000 total square feet). See Chapter 8, Sections 805.04 and 805.05 for specialized equipment and

facilities requirements. Also, includes space and equipment for:

- a. Storage for teaching materials, supplies and student references
- b. Teaching center
- c. Display case

B. Two multi-purpose rooms shall be designed for a 2 or more teacher department

1. Room one consists of:
    - a. Space and equipment for teaching foods and other instructional areas listed above - 55 to 60 square feet per student
    - b. Storage for teaching materials, student projects, supplies and references
    - c. Teaching center
2. Room two consists of:
    - a. Space and equipment for teaching clothing and other instructional areas listed above - 55 to 60 square feet per student
    - b. Storage for teaching materials, student projects, supplies and references
    - c. Teaching center with conference/office area of 150 to 200 square feet
    - d. Display cases of 24 square feet

Per each additional teacher, there should be classroom space of 625 to 800 square feet and conference/office area of 50 square feet.

A peripheral arrangement with a minimum of fixed equipment or furnishings extending out into the room promotes flexibility in the use of space. Equipment is arranged in relation to point of use to prevent congestion. Allowance between tables is 5 feet for students to pull out chairs and be seated and to permit instructor supervision.

805.012 Design Capacity - 20 students (lab) 25 students (classroom)

805.013 Location
Facilities should be located on the ground floor, preferably near an outside entrance for:

A. Convenient delivery of groceries and instructional materials
B. Convenient installation and removal of large equipment
C. Easy accessibility for physically handicapped persons
D. Easy accessibility for preschool age children and their parents
E. Convenient entry for adult students and other persons seeking help with home-related problems.

NOTE: In multi-teacher facilities, rooms adjacent to each other tend to unify the program by allowing for ease of communication, sharing of equipment and exchanging rooms for instruction. In schools with several rooms, rooms on both sides of the corridor make for a more compact facility than a row of rooms the length of the corridor.

805.014 Activities

Viewing slides, films and other projected materials; class discussions; lectures; demonstrations; individual, small or large group activities such as vocational youth organization activities; selecting, planning and evaluating student projects; preparation of teaching materials and planning of program activities.

805.015 Equipment Space and Facilities

A. Provisions made for blinds, shades and/or drapes at the windows
B. Window sills located 40 inches or higher above the floor when storage cabinets are to be installed along that wall
C. Electrical needs
    1. Separate electric control panel for the facility located in or adjacent to the home economics department
    2. Sufficient grounded electrical outlets located near the point of use to accommodate the use of many pieces of equipment at one time
    3. Ample switches and outlets provided on each wall in each room
D. Plumbing needs
    1. Adequate and properly located plumbing

connections provided for the equipment

2. A continuous supply of hot water provided. A separate hot water heater and water softener may be needed.

E. Sufficient space provided for easy movement of students and instructor

F. Major floor area of each room free of heavy or permanently fixed equipment to allow for flexible room arrangement

G. Doors placed to prevent interference with traffic patterns

H. Chalkboard - minimum of 8 linear feet per room

I. Bulletin board - minimum 15 square feet per room

J. Tables and chairs for seating of entire class. Can be arranged for small or large groups and for demonstrations as needed. (Desk/chairs may be used for non-laboratory classes).

K. Storage needs - Both general storage and within the instructional areas are provided. The two most commonly used types of storage arrangement are: (1) the separate room and (2) cabinets and/or open shelves within the classroom. Some advantages to the separate storeroom are: it leaves more wall space within the classroom, and it frees floor space for flexible arrangement when items not in use are placed in the storeroom. A combination of the 2 types is desirable with a separate room for storage of large equipment which is not used frequently, and cabinets in the classroom for student items, small equipment and frequently used teaching materials.

1. Shelving conveniently spaced and/or adjustable to fit the size and shape of equipment to be stored, such as portable sewing machines, reference books, audiovisual equipment and small equipment items
2. Drawers of a depth to serve the materials or equipment to be stored
3. Mobile base cabinets to provide additional work space and allow for more flexibility in room arrangement
4. Heavy articles stored at a carrying level
5. Movable trays or pullout sections used instead

of shelves to facilitate removing articles
6. Total amount of storage space expanded by using items such as "Lazy Susan" shelves, divided drawers, vertical shelves and stairstep shelves
7. Closed storage space provided for items that need to be protected, not used frequently, or may detract from the appearance of the room
8. Cabinets with locks provided for storage of items such as electrical appliances, portable sewing machines, food and audiovisual equipment
9. Storage units located near the department's entrance for temporary storage of students' books and personal belongings
10. Storage space provided for cleaning supplies and equipment

805.016 Teacher/Conference Area
This center may be located in a designated area of the all-purpose room or in a separate room. A separate room is desirable when there are 2 teachers and is essential for 3 or more teachers. If a separate center is necessary, it should be accessible from all rooms in the home economics facility. Equipment needed follows:
A. Teacher's desk and chair (1 each per teacher)
B. Lockable storage for teachers' belongings
C. Open and closed adjustable shelving - minimum 30 linear feet
D. 4 drawer file cabinet - 1 to 2 per teacher
E. An electrical outlet needed by each teacher's desk
F. Rooms size - 125 to 150 square feet. For each additional teacher add 50 square feet

805.02 Nutrition and Foods Specialized Equipment and Facilities

805.021 Equipment Space and Facilities
A. Kitchen units, 4 to 6, arranged in different patterns (U-type, L-type, one wall, island, corridor) to simulate home conditions. One should be planned for demonstration purposes and include an adjustable overhead mirror. Unit kitchens are arranged for easy supervision by the teacher. Upper peninsular

cabinets and range hoods that block the teacher's view are avoided.

1. Each unit kitchen consists of: double sink, range, base and wall cabinets, tables, chairs and 10-12 linear feet of work surface, excluding sink and range.
2. 24 to 30 inches of base cabinets recommended at the left of each range and left and right of the sink; also allow space for a mixing center.
3. Sink located between the range and mixing centers in each unit
4. Waste disposal included in each unit
5. 24 to 30 inches of counter work space provided for each student working in a unit kitchen and adequate storage for basic equipment and supplies located in each kitchen unit with special equipment and food supplies located nearby
6. Tables and chairs adjacent to the kitchens for serving purposes
7. Exhaust ducts and/or range hoods with fans to pull odors and fumes out of the room
8. At least one 48 inches x 72 inches cabinet with adjustable shelves needed for storing extra supplies, equipment and classroom materials
9. Variety of cabinet and counter materials, range and refrigerator models and fuels
10. Non-porous floor covering and finish for walls in unit kitchen
11. Minimum of 3 electrical outlets per kitchen unit
12. Refrigerators with freezer compartments, accessible to kitchen units: One per each 2 kitchen units. 24 to 36 inches of counter space should be provided adjacent to the latch side of each refrigerator.
13. Separate freezer desirable if used extensively as a part of the foods curriculum
14. Portable or built-in dishwasher - 1
15. Microwave oven - 1 to 2
16. Fire extinguisher, blanket and first aid kit

805.03 Laundry Area

805.031 Equipment Space and Facilities

A. Automatic washer and dryer (gas dryer must be vented to outside)
B. Sink for stain removal
C. 36 inches of counter space
D. Base and wall cabinet for storage
E. Locate in a space which allows for class demonstrations

805.04 Textiles and Clothing Area

805.041 Equipment Space and Facilities

A. One sewing machine per 2 students. These may be a combination of cabinet-type and portable (which may be stored when not in use).
    1. Each sewing machine and chair/stool provides a minimum of 3 feet for pull out space.
    2. The facility is planned so that sewing machines can be stored and the area is available for multiple uses.
    3. A grounded electrical outlet is available for each machine.
B. Multi-purpose tables, 28 inches x 42 inches x 60 inches - minimum of 5 feet between tables
C. Multi-purpose chairs - one per student
D. Pressing area - one for each 6 to 8 students. Includes:
    1. Ironing boards
    2. Steam irons
    3. A variety of small pressing equipment, such as seam roll, sleeve board and tailor's hem
    4. Grounded electrical outlet in each pressing area
E. Full length triple mirror
F. Fitting stand
G. Private space for the fitting of student garments
H. Lockable storage
    1. Cabinets for tote trays located near the entrance. One tote tray (4 3/4 inches x 12 inches x 18 inches) per student. Top of upper tote tray should not be more than 60 inches from the floor.
    2. Cabinets or closet with adjustable rods for

handing garments. Allow 4 to 6 linear feet.

3. Cabinets or walk-in closet for the storage of equipment, samples, portable machines and other materials.

I. Running water source provided

805.05 Multi-purpose Area
For instruction in the areas of housing and home furnishings, parenting and child development, personal and family relations, family health, management, consumer education and related subjects.

805.051 Equipment Space and Facilities

A. Carpeted area

B. Bathroom
    1. Tub/shower
    2. Sink and mirror
    3. Toilet

C. Easy access to (or direct) outside entrance

D. Variety of equipment, furnishings and accessories, such as living center furniture (sofa, chair, tables, lamps and pictures); roll-away bed; play pen; baby bed; high chair; bookcase; vacuum cleaner and attachments; and play equipment

E. Window(s) with draperies

F. Low, movable storage cabinets with shallow, open shelves for play supplies, equipment and children's personal belongings

Occupational home economics programs are designed to prepare students for employment in occupations utilizing the knowledge and skills in one or more of the areas related to home economics. The programs prepare persons for employment at entry or advanced levels as well as assist in the updating of skills or retraining of those already in the labor force. Jobs that relate to home economics are basically those that produce services. However, some jobs involve the production and distribution of goods. Program offerings include, but are not limited to, child care services; fashion management, production and services; food management, production and services; furnishings and interior services; management services; and hospitality services; as well as interdisciplinary programs such as home-based employment and care services.

805.06 Food Management, Production and Services - Occupational

805.061 Size
Approximately 1940 to 2540 square feet. Foods laboratory to provide work stations for 20 students - 1440 square feet. Dining area to accommodate approximately 40 persons at 14-16 square feet per person (can serve as classroom space also) - 600 square feet. Dry storage of food supplies - 200 square feet. Dressing, restroom and locker facilities - 300 square feet.

805.062 Design Capacity - 20 students

805.063 Location
Ground level, readily accessible to receiving entrance. Dining area should have an outside entrance if it is to be open to the public. The foods laboratory should be located on an outside wall or in a single story area to allow installation of exhaust fans.

805.064 Activities
Viewing slides, films and other projected materials; class discussions, lectures and demonstrations; individual and small or large group activities; instruction in planning, selecting, storing, purchasing, preparing and serving quantity food and food products; nutritive values; safety and sanitation precautions; use and care of commercial equipment; serving techniques, special diets and management of food establishments.

805.065 Equipment Space and Facilities

A. Foods laboratory to provide work stations for 20 students, including but not limited to preparation areas for meats, entrees, salads, vegetables, sandwiches, beverages and baked, fried and broiled foods. Stainless steel tables are utilized for work areas.

B. Dining area - 14 to 16 square feet per person. Can be used as instructional area. Seating accommodates every student enrolled and allows for dining service for customers. Additional space is necessary if the facility is to accommodate banquets.

C. Dry storage with temperature and humidity controls. Equipped with locks and located near delivery entrance. Shelving is adjustable.

D. Storage for cleaning supplies and equipment, located away from food preparation center

E. Storage for equipment and supplies

F. Refrigerated storage. Both freezer and refrigerator should be placed outside storeroom but adjacent to it where it is accessible to work areas.

G. Grounded electrical appliances with adequate heavy duty circuits to allow operation of more than one piece of equipment at a time. Provide a sufficient number of conveniently located outlets.

H. Dishwashing area located near the dining area. Includes a commercial dishwashing machine and a 3-compartment stainless steel sink.

I. Major traffic aisles at least 5 feet wide; 3 feet between work tables and equipment, except for ovens or kettles, where the aisle should be 3½ to 4 feet.

J. Variety of equipment reflective of the food service industry (such as grills, convection ovens, deep-fat fryer, microwave oven, range, cash register, ice machine and waitress station) available

K. Equipment which can be used for several purposes is desirable, ie., a mixer with attachments for cutting, dicing and slicing.

L. Salad preparation center near dining area with refrigeration nearby

M. Baking and salad areas located next to each other so one refrigerator can serve both units

N. Teaching area with 8 to 10 linear feet of chalkboard, teaching desk, chair, 4 drawer file cabinet and minimum 15 square feet bulletin board space

O. Lavatory in lab area for hand washing

P. Constant supply of hot and cold water. Plumbing adequate to accommodate commercial dishwasher needs.

Q. Fire extinguisher and first aid kit.

R. Ventilation adequate to remove smoke, odors, moisture and grease laden vapor and to bring in fresh air

S. Heating and cooling system to provide working temperatures of approximately 65-70 F. in winter and 70-75 F. in the summer

T. Combination of gas and electric ranges, grills and/or ovens available for student use where feasible

U. Automatic washer and dryer (located away from food preparation areas) or easy access to laundry equipment

V. Portable demonstration table with adjustable mirror

W. Facilities and equipment must conform to public health sanitation guidelines

X. Disposals should be located in the dishwashing and vegetable/salad preparation areas

Y. Storage for equipment, texts, workbooks, periodicals, instructional materials and aids and students' personal belongings

Z. Lighting appropriate for task to be completed. Approximately 15-20 footcandles for non-work areas, 30-40 footcandles for work areas and 50 footcandles for reading areas.

805.07 Care and Guidance of Children - Occupational

805.071 Size - 1800 to 2400 square feet

805.072 Design Capacity - 20 students

805.073 Location
First floor with direct exit to outside play area

805.074 Activities
Viewing slides, films and other projected materials; class discussions, lectures and demonstrations; individual, small or large group activities; observing small children; directing children's play; supervision of rest period; preparing and serving snacks or simple meals; instruction in child growth and development; nutrition; program planning and management; safety and behavior guidance; play activities; child abuse and neglect; parent-child relationships; and laws, regulations and policies relating to child-care services and maintenance of children's environment.

805.075 Equipment Space and Equipment
A. Outside play area adjacent to indoor area or on same

level; half paved - half turf with outdoor play equipment. Allow at least 75 square feet of outside play area per child. Outside play area is enclosed by a 3 feet high, child-safe barrier. An outside water source is located within the outside play area.

B. Indoor play equipment and space. Allow at least 35 square feet per child, excluding storage, food preparation and toilet areas. Include organized play centers for activities such as art, language arts, large muscle development, science, math, manipulative and dramatic play and building/climbing.

C. Observation room equipped with a shelf, chairs and one way vision mirror - approximately 100 square feet.

D. Toilet with child-size facilities - one flush toilet and one hand washing basin for each 15 children. Should be easily accessible from outdoor play area.

E. Low lavatory near entrance from outside play area

F. Isolation area approximately 50 square feet

G. Kitchen area consisting of range, refrigerator, sink and work and cabinet storage areas

H. Storage for play equipment, books and reference materials, instructional and food supplies and teachers' and students' personal belongings

I. Child-size tables and chairs for approximately 15 children. Tables should be safe, durable and sturdy, with adjustable legs. Chairs should have a 12-inch seat height for 3 or 4 year olds.

J. Cot or mat with sheet and blanket for each child should be provided for childrens' rest period if children will be in the program all day.

K. Low, child-height drinking fountain (angle jet type with non-oxidizing mouth guard)

L. Fire extinguisher located in the food preparation area

M. Teaching area with 8 to 10 linear feet of chalkboard; minimum 15 square feet bulletin board space; chairs and tables or student desks for enrolled students; teachers' desk, chair and 4 drawer file

N. Clean comfortable flooring - Fire Marshal approved carpeting on indoor play area, except snack area and arts and crafts area

O. Child-height lockers or space for childrens' clothing near main entrance

P. Chalkboard, bulleting board and window space available at child's viewing level (approximately 3 feet from floor)

Q. Electrical outlets sufficient in number (approximately one every 6 feet), grounded and conveniently located. Those within reach of children are protected by shields when not in use

R. Thermometer located approximately 30 inches above floor level. Temperature should be maintained at 68-70 F. at floor level.

S. First aid kit which includes at least an approved disinfectant, sterile cotton and gauze bandages and adhesive tape

T. Soundproof walls and ceiling

U. Adequate and safe lighting (50 footcandles for play and activity areas and 30 for other areas), heat and ventilation

V. Inside storage provided for outdoor play equipment as well as for indoor toys and play equipment

W. Lockable storage or household cleaners, chemicals and medications

805.08 Fashion Management, Production and Services - Occupational

805.081 Size
1600 square feet, exclusive of storage; related classroom area - 600 square feet

805.082 Design Capacity - 20 students

805.083 Location
Convenient to other home economics facilities if additional courses are offered.

805.084 Activities
Viewing slides, films and other projected materials; class discussions, lectures and demonstrations; individual and group activities; activities covering the entire spectrum of clothing, apparel and textile management, production and services, including but not limited to construction, fabric care, pattern design, clothing care and selection, fitting and alterations of ready-to-wear garments, custom tailoring and fashion merchandising.

805.085 Equipment Space and Facilities

A. Walk-in or built-in storage for garments, equipment and supplies
B. Adequate student work stations are available, including pattern drafting, cutting, sewing, fitting and pressing stations
C. Ample electrical power with conveniently placed electrical outlets to accommodate commercial equipment demands
D. Well lighted room with specialized lighting where needed
E. Domestic sewing machines - 2
F. Commercial sewing machines - minimum of 8, such as single needle, lockstitch, overlock, blind stitch and button hole. All machines are equipped with safety guards.
G. Operators' chairs
H. Cutting table - 6 feet x 12 feet x 3 feet
I. Cutting equipment
J. Teaching area with 8 to 10 linear feet of chalkboard, 15 square feet of bulleting board space, tables and chairs or student desks and teachers' desk, chair and 4 drawer file
K. Ironing and pressing equipment
L. Dress forms
M. Full length triple mirror
N. Fitting area or room with a fitting stand
O. Single-bowl stainless steel sink with adequate hot and cold water
P. Drawing boards and other pattern drafting equipment

805.09 Institutional and Home Management Services - Occupational

805.091 Size
Approximately 1700 to 2200 square feet; size is dependent upon emphasis of curriculum.

805.092 Design Capacity - 20 students

805.093 Location
Convenient to other home economics facilities and health occupations facilities, if additional courses are offered.

805.094 Activities

Viewing slides, films and other projected materials; demonstrations; class discussions; lectures; individual, small or large group activities; varied homemaking and housekeeping activities including hospital/executive housekeeping, hotel/motel housekeeping, commercial cleaning, provision of services to the aged in their homes and in institutions, home health aides, assistance in the management of household tasks as domestic housekeepers, assistance to consumers in decision making in relation to housing, food, clothing, community resources and other homemaking concerns and lodging services such as front desk operation.

805.095 Equipment Space and Facilities

A. Planned so that it is flexible enough to offer variety of institutional and home settings
B. Storage space for large equipment, furnishings and supplies
C. Movable walls wherever possible
D. Variety of wall and floor finishes and window treatments
E. Ample electric power; enough heavy duty circuits and outlets to permit use of many pieces of equipment at one time
F. Kitchen -1. Reflects home setting. Includes dishwasher and garbage disposal.
G. Simulated motel room and bath
H. Laundry areas with sink, sorting table, storage area, washer and dryer
I. Simulated front desk/carpeted lobby area
J. Access to health occupations facilities for hospital housekeeping simulation
K. Adequate plumbing to accommodate equipment needs
L. Teaching area with 8 to 10 linear feet of chalkboard, at least 15 square feet of bulletin board space, teacher's desk, chair and 4 drawer file; bookshelves; students' tables and chairs or desks
M. Variety of related equipment, such as maid's cart, floor polisher/rug shampooer, carpet sweeper, vacuum cleaner, two-step ladder, luggage rack, key and mail rack, credit card machine, computer and

cash register

N. Provision made for lockers, restrooms and dressing facilities in a nearby area

806 VOCATIONAL INDUSTRIAL AND TECHNICAL FACILITIES

Factors influencing the location of the building include: isolation from quiet areas; location to provide easy delivery of instructional supplies, materials and equipment; and location convenient to parking area for adult education classes.

806.01 Instructional Space - Classroom

806.011 Size
Base preliminary determination of area upon the allotment of 25 to 30 square feet per student with a minimum of 500 square feet per instructional space.

806.012 Design Capacity - 20 students

806.013 Number Required
One instructional space is required per each industrial or technical laboratory.

806.014 Location
Convenient access to the laboratory

806.015 Activities
Lectures; demonstrations; viewing slides, films and other audiovisual materials; reading printed materials; writing or drawing on chalkboard; using overhead projector and tables; displaying students' work; instructing with guides, progress charts and instruction sheets; storing instructional materials and supplies.

806.016 Equipment Space and Facilities

A. Chalkboard - 20 to 24 linear feet
    1. Display and chart rail above
    2. Chalkboard in pastel colors is preferred
B. Bulletin board - minimum 4 feet x 4 feet
C. Tables and chairs for 20 students
D. Teacher's planning unit with stool or teacher's desk and chair
E. Demonstration table - 30 inches x 60 inches,

minimum

F. Storage
  1. Legal size, 4 drawer, filing cabinets - 2
  2. Minimum of 40 linear feet of shelving
  3. Bookcase for reference books

G. Flat mat screen - 60 inches x 60 inches, minimum

H. Overhead projector and projection stand

I. Duplex electrical outlets - one per 7 linear feet of wall space

J. Provisions for light control to permit use of visual aids

K. Ceiling height - 8 feet minimum; 12 feet maximum

L. Finish
  1. Floors - tile or other resilient covering
  2. Ceiling - acoustical-type finished ceiling

806.02 Industrial and Technical Laboratories

806.021 Specific Requirements of Labs

The following labs require:

A. A minimum of 100 square feet per student work station

CODE	LABS
F, N, S, V, W, DD, EE, FF	Electronics, Electronics Technology
D, M, N, GG	Commercial Art Occupations
D, M, N, CC, DD, HH	Cosmetology
A, C, E, G, H, L, N, T, U, V, W, DD, JJ	Masonry
D, F, M, BB, DD, EE, FF	Computer Technology and Systems

B. A minimum of 120 square feet per student work station

CODE	LABS
D, M, N, Q, DD	Drafting, Civil Technology
A, B, C , H, N, R, W, BB, DD, CC	Heating, Ventilation & Air Conditioning
D, F, H, M, N, Q, R, W, BB, DD, JJ, CC	Quantity Food Occupations, Culinary Arts
B, D, E, F, L,N, S, T, U, V, W, AA, BB, DD, CC	Electrical Occupations
A, D, M, N, W, DD, GG, CC	Graphic Communications
B, C, E, L, N, P, Q, T, U, V, W, AA, BB, DD, JJ, CC	Sheet Metal
D, F, N, DD	Textile Production and Fabrics

C. A minimum of 160 square feet per student work station

CODE	LABS
A, B, C, E, F, H, L, N, O, P, S T, U, V, W, X, Y, AA, BB, DD, JJ, CC	Millwork and Cabinetmaking
A, B, C, E, F, H, L, N, S, T, U, V, W, Y, Z, AA, BB, DD, JJ, CC	General Building Construction, Facilities Maintenance, Building Maintenance, Carpentry
A, B, C, E, F, H, L, N, P, Q, S, T, U, V, W, AA, BB, DD, FF, II, JJ, CC	Welding, Metal Trades, Combined
A, B, C, E, G, H, K, L, N, O, P, Q, T, U, V, W, X, Y, DD, JJ, CC	Auto Body
A, B, C, E, G, H, J, L, N, P, T, U, V, W, X, DD, JJ, CC	Automobile Mechanics, Power Mechanics

D. A minimum of 240 square feet per student work station

CODE	LABS
A, B, C, E, F, H, I, L, N, P, R, S, T, U, V, W, X, AA, BB, DD, JJ, CC	Industrial Equipment Maintenance & Machine Shop
A, B, C, E, G, H, I, L, N, P T, U, V, W, X, DD, JJ, CC	Diesel Mechanic & Heavy Equipment Mechanic

NOTE: The assistance of specialists in Vocational Industrial and Technical Education should be secured in planning these labs and must be secured when planning labs not listed above.

806.022 Special Facility Requirements

A. Hose bibb
B. Compressed air
C. Concrete floors
D. Resilient finish floors
E. Overhead door - 10 feet x 12 feet, minimum
F. High electrical demand
G. Floor drainage
H. Exhaust system
I. Monorail
J. Automobile hoist
K. Frame rack
L. Ceiling height - 14 feet, minimum
M. Finished ceiling

N. Student wash area
O. Spray booths
P. Heavy machinery
Q. Vents
R. Natural gas
S. Master control switch
T. Ground floor
U. Access driveway
V. Tool room
W. Wainscot 4 feet from finished floor
X. Storage for flammables
Y. Dust collector
AA. 3 phase
BB. 208 V., minimum
CC. Instructional space - See Chapter 8, Section 806.011 for space requirements
DD. Storage room - 80 square feet
EE. Air conditioning
FF. Separate electrical circuit with ground fault
GG. Dark room with sink
HH. Hair wash station
II Outside storage for gas
JJ. Dressing and restroom facilities for male and female students

806.023 Design Capacity - 20 student

806.024 Location
A. Convenient access to instructional space and parking area
B. Convenient access must be provided for physically handicapped persons
C. High noise labs are to be isolated from quiet area of the school

806.025 Activities
Construct, test, operate and service equipment and tools; provide personal services for customers; depicting, shaping, forming, assembling and servicing equipment and materials; demonstrations, lectures and individualized instruction.

806.026 Equipment Space and Facilities
A. Equipment should be comparable to that used in

industry

B. The equipment will vary with the occupational objectives of the program

C. Chalkboard and bulletin board - 6 linear feet, minimum

D. Window stools should be high enough to permit installation of equipment along wall - 4 feet, minimum

E. Provide appropriate fire extinguishers for equipment and materials used in program

F. Consultation should be made with Vocational Industrial Education Service for equipment needs of various occupational areas.

807 BUSINESS EDUCATION FACILITIES

The facilities for business education should be located, ideally, on the first floor in a central location where it is relatively quiet. A first floor location, in a two-story building, makes the department easily accessible to handicapped students, adult and community education classes and for service technicians. Business education rooms should be clustered to unify the programs and allow for easy communications, sharing equipment and exchanging classrooms. The number of students enrolled and the curriculum offered determine the number and type of rooms needed.

807.01 All-Purpose Business Education Room

This room would be needed for a small school (up to 150 business students per day) with only one business teacher. Therefore, it is necessary to provide adequate space to store, maintain and use a vast amount of equipment and supplies. The room consists of the following:

A. Equipment-oriented instructional lab area for courses such as Business Computer Applications, Advanced Business Computer Applications, Keyboarding and Office Technology

B. Multi-purpose classroom instructional area for courses such as Accounting, Business Principles & Management, Shorthand/Abbreviated Writing and Business Math

C. Storage for teaching materials, supplies and student references

D. Teacher's desk and demonstration center

A 5 foot electrical grid system with flush floor outlet should be installed. A lavatory with hot and cold water should also be provided. Because of chemicals contained in some of the correction materials, carbon packs, toners, and reprograhic equipment, students and instructors need to have immediate access to a lavatory for their health and safety.

807.011 Size
1200 to 1400 square feet - 60 to 70 square feet per student

807.012 Design Capacity - 25 students per session

807.013 Location
In the central core of the building

807.014 Activities
Lecture or carry on small group or class discussions; view slides, films and other projected materials; conferences of small groups of pupils; display pupil projects or work; store partially completed pupil projects; store instructional supplies; listen to recordings or broadcasts; view telecasts; write and transcribe notes; operate keyboarding equipment/microcomputers and other business equipment.

807.015 Equipment Space and Facilities
A. Bulletin board - 10 linear feet
B. Electrical convenience outlets on each wall
C. Calculators
D. Storage (lockable) for instructional supplies
E. Storage for instructor's personal belongings
F. Lockable, legal size file drawers - 16
G. Closed bookshelving - 10 to 12 linear feet
H. Microcomputers/modem and access to network
I. Plain paper copier
J. Microcomputers or electronic typewriters
K. Overhead projector/screen
L. Dictation/transcription equipment
M. Letter quality and dot matrix printers
N. Chalkboard - 40 to 42 linear feet
O. VCR and monitor
P. Provisions to darken room
Q. Adjustable classroom furniture (desks and chairs)
R. Instructor's desk and chair

807.02 Instructional Space

This room is designed to provide space and equipment for teaching lecture/project oriented courses such as Accounting, Business Principles and Management, Business Math and Business Communications. Also, provided are teacher's desk and demonstration center and storage for teaching materials, supplies and student references.

807.021 Size
900 to 1000 square feet - 36 to 40 square feet per student.

807.022 Design Capacity - 25 students

807.023 Location

A. Direct access to the keyboarding, computer lab, or office technology laboratory
B. Convenient access to other business education rooms

807.024 Activities
Complete accounting projects; listen to recordings or broadcasts; display pupil projects or work.

807.025 Equipment Space and Facilities

A. Chalkboard - 40 to 42 linear feet
B. Bulletin board - 12 linear feet
C. Display and map rail above chalkboard and bulletin board
D. Tables or adjustable desks with space for calculators and a flat working surface for other desk activities - 20; height-adjustable chairs - 20
E. Instructors desk and chair
F. Work table - 3 feet x 6 feet
G. Work counter - 15 linear feet; 28 to 32 inches deep, with storage underneath
H. Electrical outlets
    1. Convenience strip above work counter
    2. Electrical outlets flush with floor on a grid of 5 feet
    3. Master control panel for all electrical outlets
I. Closed bookshelving - 8 to 10 linear feet
J. 4 legal size file drawers (lockable)
K. Storage for instructional supplies
L. Storage for partially completed pupil projects

M. Storage for instructor's personal belongings
N. VCR and monitor
O. Provisions to darken room

807.03 Keyboarding Laboratory

The room consists of the following:

A. Space and equipment for teaching keyboarding and typewriting (if equipped with microcomputers, it may also be used for teaching computer literacy and computer-oriented courses).
B. Storage for teaching materials, supplies and student references
C. Teacher's desk and demonstration center

An electrical grid system of 8 feet with flush floor outlet should be installed. A lavatory with hot and cold water should be provided.

807.031 Size

The size of this facility is dependent upon the type of furniture and equipment contained; 35 to 45 square feet per student may be used for preliminary estimates.

807.032 Design Capacity - 30 students

807.033 Location

In the central core of the building, in the area of other business education rooms.

807.034 Activities

Demonstrate keyboarding techniques; operate electronic and electric keyboards; write and transcribe shorthand, abbreviated writing; listen to recordings or broadcasts; display student projects or work.

807.035 Equipment Space and Facilities

A. Chalkboard - 16 to 20 linear feet (dustless type)
B. Bulletin board - 12 linear feet
C. Tables or adjustable desks appropriate for equipment to be used, with height-adjustable chairs - 30
D. Instructor's desk and chair
E. Teacher's demonstration stand
F. Display and map rails above chalkboard and bulletin board

G. Electrical outlets
    1. Convenience outlets on each wall
    2. Floor outlets flush with floor spaced on an 8 foot grid
    3. Master control panel for all electrical outlets

H. Closed bookshelving - 8 to 10 linear feet

I. Four legal size file drawers (lockable)

J. Work table - 30 inches x 72 inches

K. Storage for instructional supplies

L. Storage for partially completed pupil projects

M. Storage for instructor's personal belongings

N. Microcomputers and electronic keyboarding equipment of various types

O. Provisions for darkening room

807.04 Teachers' Office and Conference Room

The room consists of the following:

A. Area for conferences

B. Space for instructional planning, instructional materials, supplies, and record keeping

C. Storage for student records and teachers' personal belongings

807.041 Size - 200 to 250 square feet per teacher

807.042 Design Capacity

Office space for teachers and for conferences with individuals

807.043 Location

Direct access to other business education rooms

807.044 Activities

Teacher conferences; teacher-pupil conferences; instructional planning and record keeping.

807.045 Equipment Space and Facilities

A. Chalkboard - 5 to 6 linear feet

B. Bulletin board - 5 to 6 linear feet

C. Conference table with chairs

D. Desk and chair for each teacher

E. Work counter with shelving below - 10 linear feet

F. Legal size file drawers - 12 per teacher
G. Storage for personal belongings of instructors

807.05 Office Technology Laboratory

This room consists of the following items:

A. Space and equipment for teaching equipment-oriented courses such as Keyboarding, Office Technology, Work Processing, Business Computer Applications, Advanced Business Computer Applications, Computer Literacy, Shorthand, Abbreviated Writing, Computerized Accounting and Machine Transcription
B. Storage for teaching materials, supplies and student references
C. Teachers' desk and demonstration center

An electrical grid system of 8 feet with flush floor outlet should be installed. A lavatory with hot and cold water should be provided.

807.051 Size

1200 to 1400 square feet, 60 to 70 square feet per student

807.052 Design Capacity - 20 students

807.053 Location

Convenient access to other business education rooms

807.054 Activities

Write at chalkboard or tables; conference of small groups of pupils; display pupil projects or work; store partially completed pupil projects; store instructional supplies; write and transcribe shorthand or abbreviated writing notes; operate business equipment.

807.055 Equipment Space and Facilities

A. Furniture
  1. Adjustable desks appropriate to equipment being used, and adjustable posture chairs
  2. Two work tables, 3 feet x 6 feet
B. Office equipment
  1. Plain paper copier
  2. Dictation/transcription equipment
  3. Electronic typewriters (some with memory)

4. Calculators
5. Microcomputers (640 K min.), networked, hard disk; modem; letter quality and dot matrix printers

C. Electrical outlets flush with floor, spaced on a grid of 8 feet
D. Chalkboard and bulletin board - 4 to 6 linear feet of each
E. Base cabinets for storage of supplies and additional machine stations
F. Lavatory with hot and cold water
G. Provisions to darken room
H. VCR and monitor
I. Instructor's desk and chair

808 TECHNOLOGY EDUCATION FACILITIES - GRADES 9-12

Factors influencing the location include providing location for easy delivery of instructional supplies, equipment and materials, some of which are bulky and heavy; and design of laboratory to permit some change in individual room areas as activities are developed. Since technology education programs differ from industrial arts programs, the assistance of specialists should be secured to adequately plan this suite. Technology education programs include instruction in the areas of communication, transportation, construction and manufacturing.

808.01 Technology Education Production Laboratory

808.011 Size

1200 - 1500 square feet, with the room being no less than 32 feet wide

808.012 Design Capacity - 20 students

808.013 Location

A. Direct access from the building corridor
B. Direct access to other rooms in the technology education suite
C. Direct access to service drive

808.014 Activities

The laboratory facility will need to provide space for layout, measurement, cutting, forming and fabricating using a variety of materials (ie., wood, metal, plastics); space for using and caring for hand tools and a variety of machines; and space for finishing various materials.

808.015 Equipment Space and Facilities

A. The major floor area should be free of heavy or permanently fixed equipment to allow for flexible room arrangement
B. Chalkboard and bulletin board - 8 linear feet minimum
C. A minimum of 2 student work stations, with underneath storage
D. Maximum work counter and cabinet storage space
E. Lockable tool panels, if a tool room is not available
F. Windows should be high enough to permit installation of equipment along outside walls
G. Ceiling electrical grid system for 110 volt power to machines with master switches and emergency cutoff buttons
H. Adequate electrical wall outlets for power equipment and tools
I. Equipment for removal of dust, chips and harmful fumes
J. Outside door to service drive - double external door with removable mullion
K. Fire extinguishers of such kinds and sizes as recommended by the State Fire Marshal
L. Wash up area for personal cleanliness and preparation and cleaning of tools and supplies
M. Lighting should provide 75 footcandles throughout
N. Refer to the "Technology Education Curriculum Guide" for a list of specific equipment

808.02 Technology Education Systems Laboratory/Design Area

808.021 Size

Determination of size depends upon the number of students and related activities, varying from 100 to 125 square feet per student.

808.022 Design Capacity - 20 students

808.023 Location

Direct access to production laboratory to provide for easy supervision.

808.024 Activities

Classroom instruction, project planning, small group activities, and a dust-free environment for instruction and activities with equipment such as computers, robotics, electronics, and lasers.

808.025 Equipment Space and Facilities

A. Glass walls or windows in wall facing production laboratory to provide for easy supervision
B. Chalkboard - 20 linear feet minimum, and bulletin board - 10 linear feet
C. Maximum counter and cabinet storage space along walls (Some of this space may be used for computers. If so, height needs to be adjusted accordingly).
D. Windows should be high enough to permit installation of counters along outside walls
E. Provisions made for blinds or shades to allow for showing of audiovisual materials
F. Adequate electrical wall outlet strips for use of electronic equipment, computers and related peripherals
G. Reconfigurable tables and chairs for 20-25 students
H. Bookcase for reference and resource books; magazine racks
I. Wall mounted projection screen
J. Floors - tile or carpeting
K. Ceiling - acoustical-type finish
L. Air conditioning
M. If modular furniture is to be used (4 feet, 5 feet, 6 feet), room layout needs planned accordingly.

808.03 Instructor's Office

808.031 Size - varying from 100 to 150 square feet

808.032 Location

Convenient or direct access to production laboratory and systems laboratory.

808.033 Equipment Space and Facilities

A. Teacher's desk and chair
B. Conference chairs - 1 or 2

C. Storage
    1. Letter size, 4 drawer file cabinets - 2
    2. Open and closed shelving for supplies and references, 20 to 30 linear feet
D. Minimum of 2 duplex outlets

808.04 Finishing Area

This area needs to be a separate room or enclosed, ventilated spray booth.

808.041 Size - varying from 75 to 125 square feet

808.042 Location
Direct access to production laboratory

808.043 Activities
Mixing and application of a variety of surface finishes.

808.044 Equipment Space and Facilities
A. Window in wall facing laboratory to provide for easy supervision
B. Maximum work counter space
C. Positive ventilation
D. Metal storage cabinet for paint, varnish and other flammable materials
E. Fireproof containers for paint rags
F. Fire extinguishers
G. Adjustable, high intensity, spark-proof lights
H. Hooded spray booth

808.05 Material Storage

808.051 Size - varying from 150 to 200 square feet

808.052 Location - direct access to other laboratories

808.053 Activities
For storage of various types of stock and other supplies necessary in the technology classroom

808.054 Equipment Space and Facilities
A. Wide access door

B. Storage racks for various types of stock. If stock includes wood and metal, stock may be as large as 4 feet x 8 feet
C. Adjustable shelving and cabinets for small items

NOTE: This storage may be provided in the form of cabinetry in the laboratory. If so, adjust square footage of laboratory accordingly.

808.06 Audiovisual Darkroom Laboratory

808.061 Size - varying from 200 to 250 square feet

808.062 Location
Direct access to systems laboratory

808.063 Activities
Developing film and photographic paper; enlarging pictures; demonstrating lasers, producing a variety of audiovisual materials such as mock radio and television segments.

808.064 Equipment Space and Facilities
A. Safe light as well as regular overhead lighting
B. Maximum work counter space
C. Maximum cabinet storage; some must be light safe
D. Positive ventilation
E. Sink and hot and cold running water
F. Electrical outlets along counter
G. Lightproof and soundproof from exterior influences
H. Additional electrical outlets for equipment usage

809 CAREER EXPLORATION

Career exploration programs should utilize existing agriculture, business, home economics and technology education laboratories. With adequate career exploration equipment and materials, existing vocational laboratories may be utilized effectively. See particular sections for area of specifications.

Chapter 9

GENERAL SUPPORT FACILITIES

900 COUNTY SUPPORT FACILITIES

County boards of education have sufficient support facilities to maximize the efficient administration of the county schools. Accessible county support facilities are provided and maintained to promote a healthy and safe environment. Space and equipment available in such facilities provide the support services necessary for a thorough and efficient educational program. When possible, support facilities are housed together to maximize efficiency.

901 ADMINISTRATIVE FACILITIES

County boards of education provide adequate office and ancillary space to house all administrative personnel and functions.

901.01 Size

Support facilities are organized in such a manner as to provide effective services as economically as possible. The size and number of such facilities are dependent upon the services required by the county.

901.02 Site

901.021 Location

Each administrative facility should be located and developed in proper relationship to the county's governmental agencies, such as the county center of government.

901.022 Size

Site shall be of adequate size to provide parking for the staff and regular visitors. Allow approximately 325 square feet of space for each car. See Chapter 2 for applicable site information.

902 GENERAL OFFICE AND RECEPTION/WAITING AREAS - ADMINISTRATIVE FACILITIES

902.01 Size

Dependent upon size of the center, 200 to 400 square feet will likely be needed for secretarial and reception areas.

902.02 Location
- A. At the hub of the administrative suite
- B. Direct access to a building corridor and to work room
- C. Direct or convenient access to other office rooms in the administrative suite
- D. Near main entrance to facility
- E. Convenient access to workroom

902.03 Activities

Reception of visitors, pupils and staff; general secretarial activities required in the operation of the center.

902.04 Equipment Space and Facilities
- A. Counter separating reception/waiting room or area from the secretarial work area
- B. Comfortable chairs in reception area
- C. Small table for magazines and other literature
- D. Display space and bulletin board
- E. Secretarial furniture
- F. Master telephone station or other communication to all locations in the administrative areas
- G. Carpeting or resilient floor covering

903 WORK ROOMS - ADMINISTRATIVE FACILITIES

903.01 Size - 200 to 300 square feet

903.02 Location - Direct access to the general office and waiting room

903.03 Activities

Preparation of materials, reports and layouts of instructional materials by both secretarial and other personnel.

903.04 Equipment Space and Facilities
- A. Combination of open shelving and closed cabinets for storage of a variety of supplies and equipment
- B. Space for duplicating machine
- C. Work table or counter
- D. Lavatory
- E. Microcomputer work station
- F. Carpeting or resilient floor covering

G. Forced ventilation

904 STORAGE FOR BOOKS AND INSTRUCTIONAL SUPPLIES - ADMINISTRATIVE FACILITIES

904.01 Size
500 to 1000 square feet. Base size on county needs for central instructional supply and distribution.

904.02 Location
A. Convenient access to the general office
B. Direct opening to corridor through "dutch door" or window to permit distribution of supplies
C. Exterior door for receiving and distribution

904.03 Activities
Storage and distribution of instructional materials and supplies including books, papers, notebooks, erasers and pencils.

905 BOARD ROOMS/MEETING ROOMS - ADMINISTRATIVE FACILITIES

905.01 Size
Approximately 600 square feet, depending on the space needed for spectator seating.

905.02 Location
A. Convenient access to general office
B. Design and location should permit groups to confer without being overheard in adjacent rooms.

905.03 Activities
Conferences and training involving staff, and regular and special board meetings.

905.04 Equipment Space and Facilities
A. Conference table, chairs and spectator chairs
B. Chalkboard - 6 to 8 linear feet
C. Bulletin board - 4 to 6 linear feet
D. Pull-down projection screen
E. Forced ventilation
F. Capability of darkening room
G. Carpet

906 SUPERINTENDENT'S OFFICE - ADMINISTRATIVE FACILITIES

906.01 Size - 180 to 300 square feet

906.02 Location

A. Direct or convenient access to general office
B. Convenient access to the corridor without going through the general office
C. Convenient access to other areas in the administrative suite
D. Convenient to board room

906.03 Activities

Planning, research and administrative activities conducted individually or in groups.

906.04 Equipment Space and Facilities

A. Room design should permit the superintendent to confer without being overheard in adjacent areas.
B. Conference desk and chair
C. Work table convenient to desk for layout work
D. Conference chairs
E. Bookshelving - 10 to 15 linear feet
F. Storage for personal belongings
G. Telephone service and intercom to secretary in general office
H. Carpet

907 ASSISTANT SUPERINTENDENT'S OFFICE - ADMINISTRATIVE FACILITIES

907.01 Size - 125 to 200 square feet

907.02 Location

Convenient access to general office and superintendent's office.

907.03 Activities

Planning, research and administrative activities conducted individually or in small groups.

907.04 Equipment Space and Facilities

A. Room design should permit the assistant superintendent to confer without being overheard in adjacent areas.
B. Conference desk and chair
C. Work table convenient to desk for layout work

D. Conference chairs
E. Bookshelving - 10 to 15 linear feet
F. Storage for personal belongings
G. Telephone service and intercom to secretary in general office

908 OFFICES FOR PROFESSIONAL SUPPORT PERSONNEL - ADMINISTRATIVE FACILITIES

NOTE: Number of spaces required will depend on the local staff size

908.01 Size - 120 to 150 square feet per office

908.02 Location
A. Direct access from reception area and convenient access to meeting room and general office in the administrative suite.
B. Design and location should permit conferences without voices being overheard in the adjacent areas.
C. Easy access to vault and records

908.03 Activities - Daily Execution of Job Duties

908.04 Equipment Space and Facilities
A. Desk and chair
B. Conference chairs
C. Shelving - 10 to 15 linear feet
D. Bulletin board - 4 to 6 linear feet
E. Storage for personal belongings
F. Telephone communication with general office and intercom to secretary. Require private telephone line or lines to the counselor's office.
G. 4 drawer file cabinet with lock - 1
H. Carpet
I. Microcomputer work station

909 RECORD VAULT - ADMINISTRATIVE FACILITIES

NOTE: Vault may be eliminated by providing fire resistant filing cabinets in the general office or other storage area.

909.01 Size - 200 to 300 square feet

909.02 Location - Direct or convenient access from the general office

909.03 Activities - Storage of current and inactive records

909.04 Equipment Space and Facilities
- A. General construction should be fire resistant
- B. Cart storage units preferable for current records
- C. Carpet

910 SECRETARIAL WORK AREAS OR OFFICES - ADMINISTRATIVE FACILITIES

NOTE: Number of spaces required will depend on the local staff size.

910.01 Size - 100 to 120 square feet

910.02 Location - Direct access to offices served

910.03 Activities - Daily execution of job duties

910.04 Equipment Space and Facilities
- A. Secretarial desk and chair
- B. Typewriter and stand
- C. Comfortable chairs
- D. Filing cabinets
- E. Carpet
- F. Telephone communication with general office
- G. Microcomputer work station

911 STAFF LOUNGE - ADMINISTRATIVE FACILITIES

911.01 Size - 150 to 180 square feet

911.02 Location
- A. Direct access from a building corridor
- B. Location avoiding major traffic, yet reasonably close to the administrative area
- C. Toilets should not have direct opening into the lounge area
- D. Carpet or resilient flooring

911.03 Equipment Space and Facilities
- A. Comfortable lounge furniture
- B. Kitchenette to prepare light refreshments
- C. Adequate ventilation
- D. Toilets

912 SERVICE FACILITIES - ADMINISTRATIVE FACILITIES

See Chapter 11

913 ENGINEERING AND CUSTODIAL FACILITIES - ADMINISTRATIVE FACILITIES

See Chapter 12

914 COUNTY MAINTENANCE AND OPERATIONS FACILITIES

The maintenance component of the program is concerned with keeping all school facility sites, buildings and equipment at their original condition of completeness and efficiency, either through repairs or replacement. The operation component of the program is concerned with the day-to-day services which are necessary to keep the physical plant open and in a safe, usable condition.

915 MAINTENANCE FACILITIES

County boards of education provide sufficient, secure and centrally located repair and maintenance facilities for educational facilities. County boards of education provide sufficient facilities for storage of all supplies, equipment and food items.

915.01 Size

Maintenance facilities are organized in such a manner as to provide effective services as economically as possible. The size of such facilities is dependent upon the services required by the county.

915.02 Location/Site

The operations and maintenance facility should be located centrally in the county for the convenience of maintenance personnel traveling from the facility to schools and other staff traveling to this facility for training sessions. It may be desirable to have a combination administrative, operations and maintenance facility.

Site shall be of adequate size to provide parking for staff automobiles, maintenance trucks and delivery vehicles. Allow 325 square feet of space for each car.

916 GENERAL OFFICE AND RECEPTION/WAITING AREAS - MAINTENANCE FACILITIES

916.01 Size

Dependent upon size of the center, 200 to 400 square feet will likely be needed for secretarial and reception areas.

916.02 Location

A. At the hub of the administrative suite
B. Direct access to a building corridor and to work room
C. Near main entrance of facility
D. Convenient access to work room

916.03 Activities

Reception of visitors and staff; general secretarial activities required in the operation of the center.

916.04 Equipment Space and Facilities

A. Counter separating reception/waiting room or area from the secretarial work area
B. Comfortable chairs in reception area
C. Small table for magazines and other literature
D. Display space and bulletin board
E. Secretarial furniture
F. Master telephone station or other communications to all locations in the facility
G. Carpeting or resilient floor covering

917 WORK ROOMS - MAINTENANCE FACILITIES

917.01 Size - 100 to 150 square feet

917.02 Location

Direct access to the general office and waiting room.

917.03 Activities

Preparation of reports and layouts of materials by both secretarial and other personnel.

917.04 Equipment Space and Facilities

A. Combination of open shelving and closed cabinets for storage of a variety of supplies and equipment
B. Duplicating machine

C. Work table or counter
D. Lavatory
E. Microcomputer work station
F. Resilient floor covering
G. Forced ventilation

918 MEETING ROOMS/TRAINING FACILITIES - MAINTENANCE FACILITIES

918.01 Size - Approximately 500 square feet (depending on needs for training sessions).

918.02 Location
A. Convenient access to general office/reception/waiting areas.
B. Design and location should permit groups to confer without being overheard in adjacent rooms.

918.03 Activities - Conferences and Training of Staff

918.04 Equipment Space and Facilities
A. Conference tables and chairs
B. Chalkboard - 6 to 8 linear feet
C. Bulletin board - 4 to 6 linear feet
D. Forced ventilation
E. Carpet
F. Capability of darkening room
G. Pull-down projection screen

919 RECORD STORAGE - MAINTENANCE FACILITIES

NOTE: Room may be eliminated by providing fire resistant filing cabinets in the general office or other storage area.

919.01 Size - 120 to 180 square feet

919.02 Location - Direct or convenient access from the general office and other areas.

919.03 Activities - Storage of current and inactive building documents.

919.04 Equipment Space and Facilities
A. General construction should be fire resistant
B. Files for plans and documents
C. Plan table

D. Microcomputer work station
E. Filling cabinets

920 OFFICES FOR PROFESSIONAL SUPPORT PERSONNEL AND SERVICE SUPERVISORS - MAINTENANCE FACILITIES

NOTE: Number of spaces required will depend on the size of the local staff.

920.01 Size - 125 to 200 square feet

920.02 Location
Convenient access to general office and other spaces.

920.03 Activities
Planning, research and administrative activities conducted individually or in small groups.

920.04 Equipment Space and Facilities
A. Room design should permit staff members to confer without being overheard in adjacent areas.
B. Conference desk and chair
C. Conference chairs
D. Bookshelving - 10 to 15 linear feet
E. Storage for personal belongings
F. Telephone service and intercom to secretary in general office
G. Carpet or resilient floor covering

921 SECRETARIAL WORK AREAS OR OFFICES - MAINTENANCE FACILITIES

NOTE: Number of spaces required will depend on the size of the local staff.

921.01 Size - 100 to 120 square feet

921.02 Location - Direct access to offices served

921.03 Activities - Daily execution of job duties

921.04 Equipment Space and Facilities
A. Secretarial desk and chair
B. Typewriter/word processor

C. Comfortable chairs
D. Filing cabinets
E. Telephone communication with general office
F. Carpet
G. Microcomputer work station

922 CARPENTRY, PLUMBING, HEATING AND ELECTRICAL MAINTENANCE SHOPS - MAINTENANCE FACILITIES

922.01 Size - 500 to 1000 square feet for each shop; base size on county needs for maintenance services.

922.02 Location
A. Convenient access to the general office
B. Exterior door for distribution and receiving
C. May be desirable to have an enclosed loading and unloading area for service vehicles.

922.03 Activities
Storage of replacement parts, repairs to building components and distribution of maintenance supplies.

923 SERVICE FACILITIES - MAINTENANCE FACILITIES

See Chapter 11

924 ENGINEERING AND CUSTODIAL FACILITIES - MAINTENANCE FACILITIES

See Chapter 12

925 STAFF LOUNGE - MAINTENANCE FACILITIES

925.01 Size - 100 to 150 square feet, or according to staff number.

925.02 Location
A. Direct access from a building corridor
B. Location avoiding major traffic, yet reasonably close to the administrative area
C. Toilets should not have direct opening into the lounge area

925.03 Equipment Space and Facilities
A. Comfortable lounge facilities

B. Kitchenette to prepare light refreshments
C. Adequate ventilation

926 STORAGE FACILITIES

County boards of education provides sufficient facilities for storage of all supplies, equipment and food items.

926.01 Custodial and food service storage rooms. (Must be separate spaces.)

926.011 Size
500 to 1000 square feet; base size on county needs for central supply and distribution of custodial supplies, dry foods, refrigerated foods and frozen foods to the local system.

926.012 Location
A. Convenient access to the general office
B. Direct opening to corridor through "dutch door" or window to permit distribution of supplies
C. Exterior door for receiving and distribution

926.013 Activities
Storage and distribution of materials and supplies.

927 TRANSPORTATION FACILITIES

Transportation services are an integral part of the system of education in West Virginia. With expanding transportation requirements comes the necessity to maximize efficiency and at the same time exercise extreme concern for safety. County boards of education provide sufficient, secure and centrally located staff offices, training spaces and storage, repair and maintenance facilities for all school buses and vehicles.

927.01 Size
Transportation facilities are organized in such a manner as to provide effective services as economically as possible. The size and number of such facilities are dependent upon the services required by the county. The following is generally felt to be required to adequately serve a smaller county and may be used as a standard for multi-centers in larger counties.

927.02 Site

The transportation facility must have a site sufficient to park the county's entire fleet of buses, as well as employees' and visitors' vehicles. See Chapter 2, Section 206 for additional information. The following can be used for preliminary planning, but final layouts must be done to insure accurate planning.

A. Buses - 20 per acre
B. Cars - 325 square feet
C. Due to the size of buses and their turning radius large amount of space are required for circulation of vehicles.
D. Center should be located to facilitate easy access and reduce bus runs.

928 BUS REFUELING/PUMP STATIONS - TRANSPORTATION FACILITIES

Refueling pumps and/or stations are safely separated from maintenance and storage areas. Facility must supply all types of fuel in use, such as gasoline, diesel, LPG and CNG. Facility should be visible from the office area, must comply with applicable safety standards, and provide adequate space for bus circulation.

929 RECEPTION/WAITING AREAS - TRANSPORTATION FACILITIES

929.01 Size

Dependent upon size of the center, 200 to 400 square feet will likely be needed for secretarial and reception areas.

929.02 Location

A. At the hub of the administrative suite
B. Direct access to a building corridor and to work room
C. Direct or convenient access to director's office and other rooms in the administrative suite
D. Near main entrance to facility
E. Access to work room

929.03 Activities

Reception of visitors and staff, and general secretarial activities required in the operation of the center.

929.04 Equipment Space and Facilities

A. Counter separating reception/waiting room or area from the secretarial work areas
B. Comfortable chairs in reception area

C. Small table for magazines and other literature
D. Display space and bulletin board
E. Secretarial furniture
F. Master telephone station, or other communications, to all locations
G. Carpeting or resilient floor covering

930 DIRECTOR'S OFFICE - TRANSPORTATION FACILITIES

930.01 Size - 250 to 225 square feet

930.02 Location

A. Direct or convenient access to general office
B. Convenient access to the corridor without going through the general office
C. Convenient access to other areas

930.03 Activities

Planning, research and administrative activities conducted individually or in small groups.

930.04 Equipment Space and Facilities

A. Room design should permit the director to confer without being overheard in adjacent areas.
B. Conference desk and chair
C. Work table convenient to desk for layout work
D. Conference chairs
E. Bookshelving - 15 to 30 linear feet
F. Storage for personal belongings
G. Telephone service and intercom to secretary in general office

930.05 Assistant Director/Trainer Offices

These spaces may be needed, depending on the size of the local transportation system.

930.051 Size - 125 to 180 square feet

931 WORK ROOM - TRANSPORTATION FACILITIES

931.01 Size - 100 to 150 square feet

931.02 Location
Direct access to the general office and waiting room.

931.03 Activities
Preparation of materials, reports and layouts of materials by both secretarial and other personnel.

931.04 Equipment Space and Facilities
- A. Combination of open shelving and closed cabinets for storage of a variety of supplies and equipment
- B. Duplicating machine
- C. Work table or counter
- D. Lavatory
- E. Microcomputer work station
- F. Resilient floor covering

932 STAFF LOUNGE/TRAINING ROOM - TRANSPORTATION FACILITIES

932.01 Size - According to staff number, 250 to 700 square feet

932.02 Location
- A. Direct access from a building corridor
- B. Location avoiding major traffic, yet reasonable close to the director's office
- C. Toilets should not have direct opening into the lounge area.

932.03 Equipment Space and Facilities
- A. Comfortable lounge furniture (if not used for training)
- B. Kitchenette to prepare light refreshments
- C. Adequate ventilation
- D. Toilets
- E. Pull-down projection screen
- F. Capability of darkening room
- G. Chalkboard - 8 feet x 12 feet
- H. Bulletin board - 4 feet x 6 feet
- I. Tables and chairs (if used for training)

NOTE: The size of staff lounge/training room will vary, depending upon availability of space for training activities at other locations within the system.

933 GENERAL SERVICE BAYS - TWO (2) - TRANSPORTATION FACILITIES

933.01 Size - 20 feet x 60 feet space, with 14 feet x 14 feet overhead door; provide 14 feet minimum height.

933.02 Location
- A. Direct access to vehicle storage yard
- B. Access to tool room (200 square feet)
- C. Access to parts room (400 to 600 square feet with 15 feet ceiling height and double doors for removal of large parts)

933.03 Equipment Space and Facilities
- A. Mechanic work benches with wall space above
- B. Overhead beam and lift for engine removal
- C. Outlets for exhaust removal
- D. Compressed air
- E. Cold water
- F. 120 volt and 240 volt electric
- G. Trench drains
- H. Non-slip concrete floor

934 HYDRAULIC LIFT BAY - ONE (1) - TRANSPORTATION FACILITIES

934.01 Size - 20 feet x 60 feet space, with 14 feet x 14 feet overhead door. Provide minimum 18 feet height.

934.02 Location
- A. Access to the new oil storage room (100 square feet)
- B. Access to tool room
- C. Access to parts room

934.03 Equipment Space and Facilities
- A. Mechanic work benches with wall space above
- B. Adjustable length hydraulic lift for lifting entire bus at one time
- C. Outlets for exhaust removal
- D. Used oil receiver
- E. Compressed air
- F. Cold water
- G. Electric - 120 volt and 240 volt
- H. Floor drains
- I. Non-slip concrete floor

935 WASH BAY - ONE (1) - TRANSPORTATION FACILITIES

935.01 Size - 20 feet x 60 feet pull-thru, if possible. If automatic wash equipment is used, the room size must be coordinated with the equipment manufacturer.

935.02 Location
- A. Fully partitioned space
- B. Adjacent to other service bays
- C. Easy circulation to and from the service yard
- D. Access to hot water heater room and mixing equipment

935.03 Equipment Space and Facilities
- A. Adequate heat and ventilation for year-round usage
- B. Water resistant floor and wall finishes
- C. Adequate drains
- D. Non-slip concrete floor

936 BODY REPAIR/PAINT BAY - ONE (1) - TRANSPORTATION FACILITIES

NOTE: Wash bay may be used for this purpose, but this is not recommended because of the need for a clean, dry environment and the requirements to satisfy health and safety concerns.

936.01 Size - 20 feet x 60 feet space, with 14 feet x 14 feet overhead door. Provide minimum 14 feet ceiling height.

936.02 Location
- A. Easy access to vehicle storage yard
- B. Access to paint equipment and supply room
- C. Access to parts room
- D. Must be self-contained space

936.03 Equipment Space and Facilities
- A. Mechanic work benches
- B. Heated, filtered make-up air and filtered exhaust air system
- C. Compressed air
- D. Cold water
- E. Electric, 120 volt and 240 volt
- F. Floor drains
- G. Non-slip concrete floor

937 SERVICE FACILITIES - TRANSPORTATION
See Chapter 11

938 ENGINEERING AND CUSTODIAL FACILITIES - TRANSPORTATION
See Chapter 12

Chapter 10

FACILITY SAFETY

1000 OVERALL FACILITY SAFETY

All school facilities are designed, constructed, furnished and maintained in a manner that assures every reasonable and necessary safeguard to the life and health of persons who enter and use the facility.

The safety of each facility is determined upon compliance with the minimum requirements of the State Fire Code, as well as the State Department of Health and other regulatory agencies. The contents of this section are not all-encompassing, and reference is necessary to the applicable law for compliance.

1001 STRUCTURAL SAFETY

References:

12. Building Officials and Code Administrators International Basic Building Code - B.O.C.A.
13. State Building Code of West Virginia (Latest Edition)

All school facilities are to be designed, constructed, furnished and maintained with methods, materials and equipment that provide adequate structural safety, fire resistance and protection and convenience in traffic circulation. All school facilities shall be in compliance with all applicable state regulatory agencies.

1001.01 The structural design elements shall provide the following:

A. The ability of the building to resist lateral forces such as are imposed by extreme winds and earthquakes
B. The ability of the building to resist distortion and rapid deterioration from excessive or uneven foundation settling or the overstress of structural members and inadequate tying
C. The ability of the building to carry the maximum live loads imposed on it by school and community use.

1002 TYPES OF CONSTRUCTION AND AREA LIMITATIONS

1002.01 Approved automatic sprinkler systems must be installed in all new buildings used for any occupancies exceeding the areas in the building height table. See Chapter 10, Section 1010.01.

1002.02 Places of Assembly

These, in educational facilities, shall be limited as the following explains. Places of assembly include, but are not limited to, all buildings or portions of buildings used for gathering together 50 or more persons for such purposes as deliberation, worship, entertainment, dining, amusement or awaiting transportation. Examples: gymnasiums, auditoriums, libraries and cafeterias.

Classification of places of assembly are explained as follows: Each place of assembly shall be classified, according to its capacity:

Class A, capacity of 1000 persons or more; Class B, capacity of 300 to 1000 persons; Class C, capacity of 50 to 300 persons.

Type of Construction	Below LED	LED	Number of Levels Above LED			
			1	2	3	4 & Above
I(443) I(332) II(222)	A*B*C Any number of Levels	ABC	ABC	ABC	ABC	A*B*C
II(111)	A*B*C One Level Below LED	ABC	ABC	A*BC	B*C*	N.P.
III(211) IV(2HH) V(111)	A*B*C* One Level Below LED	ABC	ABC	A*B*C	B*C*	N.P.
II(000)	B*C* One Level Below LED	ABC	C*	N.P.	N.P.	N.P.
III(200) V(000)	B*C* One Level Below LED	BC	C*	N.P.	N.P.	N.P.

*Permitted if the level of the place of assembly and any story intervening between that level and the level of exit discharge are protected throughout by an approved automatic sprinkler system. If there are any openings between the level of exit discharge and the exits serving the place of assembly, the level of exit discharge shall also be protected throughout by an approved automatic sprinkler system.

N.P. - Not Permitted
LED - Level of Exit Discharge

1003 FIRE PROTECTION

1003.01 Fire Safety
Fire safety, in educational facilities, includes, but is not limited to fire resistive construction, fire alarm systems, sprinkler systems, exits, enclosure of vertical openings and evacuation plans.

1003.02 Refer to appropriate sections of West Virginia Fire Code. This code is on file in every county clerk's office.

1003.03 Heating Plant and Kitchen Ranges

A. The furnace room shall be isolated from pupil-occupied areas by location and/or treatment (fire resistive construction).
B. Heat plant installations shall be in accordance with appropriate state and local codes.
C. Kitchen ranges of more than four burners, deep fat fryers and ovens must have ventilation and protection in accordance with the State Fire Code; NFPA 96, Vapor Removal Cooking Equipment.

1003.04 Electric Services
All wiring, connections and electrical installations shall be in accordance with the State Fire Code; NFPA 70, National Electrical Code.

1003.05 Fire Alarm System

1003.051 General Requirements

A. All fire alarm systems, including all components, shall be electrically supervised. Components shall include pull stations, automatic detection, sounding devices, flow switches, tamper switches and main panel.
B. All fire alarm systems shall be tied in ahead of the main power disconnect unless secondary power source is provided.
C. All fire alarm system wiring shall be in accordance with The National Fire Codes; imposed by Section 4 of the State Fire Code.
D. Sprinkler system(s) installed - the OS & Y and P.I.V.

Valves shall be electrically supervised and tied into the trouble side of the panel.

E. Sprinkler system(s) shall be tied in so flow will activate the general fire alarm sounding device(s).

F. Flow and/or pressure switches shall be annunciated separately on the main fire alarm panel.

G. Heating, ventilation, air conditioning systems (HVAC)

1. All heating, ventilation and air conditioning systems greater than 2000 CFM and less than 15,000 CFM shall have a duct-type smoke detector in the return air duct or plenum for automatic shut down to close main fan dampers and to sound general fire alarm when activated.
2. All heating, ventilation and air conditioning systems greater than 15, 000 CFM shall have duct-type smoke detectors installed in both supply and return air duct to automatically shut down, close main fan dampers and sound general fire alarm when activated.
3. 100% utilization of outside air will not require duct detector(s).
4. Exception: HVAC systems used as part of the engineered smoke control systems are exempt.

H. Audible alarm indicating devices shall be of such character and so distributed as to be effectively heard above the ambient noise level obtained under normal conditions of occupancy. Audible alarm indicting devices shall produce audible signals that are distinctive from those used for other purposes in the same building.

Prerecorded or live voice evacuation instructions to occupants are permitted. Prerecorded instructions shall be preceded by not less than 5 seconds, or more than 10 seconds, of a continuous alerting signal. Upon completion or failure of prerecorded instructions, the fire alarm evacuation signal shall sound. Prerecorded instructions shall be repeated two or more times. Live voice instructions shall be permitted to interrupt the prerecorded message of the fire alarm evacuation signal. Audible and visual fire alarm devices shall be used only for the fire alarm system.

I. Manual pull stations shall be located no greater than 200 feet from each other and at all exits. Manual pull stations shall be of the same general operational type.

J. Thermal detectors are required in the following areas in all occupancies requiring a fire alarm system, and as listed or identified in the Life Safety Code (NFPA 101):

1.	Elevator Shafts	Fixed Temperature
2.	Attic and Cockloft Spaces	Fixed Temperature
3.	Storage Rooms	Rate of Rise
4.	Furnace or Boiler Rooms	Fixed Temperature
5.	Janitor Closets	Rate of Rise
6.	Kitchens	Fixed Temperature
7.	Laboratories, Home Economics, Woodworking Shops, Auto Shops, Utility Rooms & Locker Rooms	Rate of Rise

K. Smoke detectors are required in the following areas in all occupancies requiring fire alarm systems:

1. Rooms and/or areas designated for the location of electrical distribution panels or transformers.
2. Stages - smoke detectors, where required, shall be placed a maximum of 15 feet from ends of corridors or walls and 30 feet apart on centers. Variance with these requirements must have submission of technical data to justify exceeding these distance requirements.

L. A building of structure being used for more than one occupancy must comply with the fire alarm system requirements of the most stringent occupancy.

1003.052 Requirements for Educational Occupancy

A. A fire alarm system is required in every educational occupancy area (as defined in the Life Safety Code), and such a system must meet the requirements and standards as provided herein. Educational occupancies area as defined in the Life Safety Code. Exception: One or two room buildings of less than 2500 square feet gross floor area with direct exit to the outside from each classroom.

B. The general requirements set forth in Chapter 10, Section 1003.052 must be complied with.

C. Open plan classroom concepts will require a complete smoke detection system throughout the facility.

D. Day care centers located in buildings other than educational facilities shall have smoke detectors installed on ceilings of each story. Detectors must be placed in front of the doors to the stairways, and in the corridors of all floors occupied by the center (no farther than 30 feet apart). Detectors shall also be installed in lounges and recreation areas in the center.

E. An annunciator for the fire alarm panel is to be readily accessible to local fire department personnel if more than one zone is provided.

G. Rate of rise thermal detectors are required in all rest rooms having three (3) or more fixtures.

H. Smoke detectors shall be installed in all corridors, except in single story buildings with direct exit to the exterior (via a door) from every room normally occupied by students.

1003.06 Fire Extinguishers

A fire extinguisher shall be installed in accordance with the State Fire Code; NFPA 10, Portable Extinguishers.

1003.07 Occupant load Calculations

A. The occupant load of educational facilities, or any individual stories or sections thereof, shall be as determined by the State Fire Code; NFPA 101, Life Safety Code: One person for each 20 square feet of net classroom area, or 50 square feet of the net area of shops, laboratories and similar vocational rooms.

B. Occupant load requirements of lecture rooms, gymnasiums or cafeterias used for assembly purposes shall also be determined by the State Fire Code; NFPA 101, Life Safety Code.

1003.08 Emergency Lighting

Every educational facility shall have emergency lighting for the following:

A. All interior stairs and corridors

B. All spaces that are normally occupied, except administrative areas, classrooms and mechanical and storage areas.

NOTE: Shops and laboratories require emergency lighting.

1003.09 Extinguishment Requirement

A. Every portion of each educational building below the floor of exit discharge shall be protected throughout by an approved automatic sprinkler system in accordance with the State Fire Code; NFPA 101, Life Safety code.

B. Every educational building shall be provided with an automatic sprinkler system, as required in Section 5 of the State Fire Code and other applicable sections. See Chapter 10, Section 1002.01.

1003.10 Vertical Openings

All vertical openings in educational buildings shall be enclosed and protected by fire resistive construction, as required by the State Fire Code.

1003.11 Classrooms

Every room or space used for classroom or other educational purposes shall have at least one outside window used for emergency rescue or ventilation. Such window shall be openable from the inside without the use of tools and provide a clear opening of not less than 20 inches in width, 24 inches in height and 5.7 square feet in area. The bottom of the opening shall be no higher than 44 inches above the floor. Exceptions to this requirement are completely sprinklered building and/or classrooms contained therein having direct exit to the outside.

1004 NOTIFYING THE FIRE DEPARTMENT

Whenever an unwanted fire occurs in any building or on any premises of any kind, the owner, manager, occupant, or any person in control of such building or premises, upon discovery of an unwanted fire, or evidence of there having been an unwanted fire, even though it has apparently been extinguished, immediately shall cause notice of the existence of such fire, circumstances of same, and the location thereof to be given to the Fire Department. This requirement shall not be construed to forbid the owner, manager, or other person in control of the aforementioned building or premises from using all diligence necessary to extinguish such fire prior to the arrival of the Fire Department.

No person shall make, issue, post, or maintain any regulation or order, written or verbal, that would require any person to take any unnecessary delaying action prior to reporting a fire to the Fire Department.

1005 CIRCULATION, SAFETY AND CONVENIENCE

1005.01 Corridors

A. Each corridor shall be a minimum of 6 feet wide in the clear. Room and locker doors swinging into corridor shall not, at any point of the swing, reduce the minimum clear passage.

B. A means of egress shall exist at each end of a corridor, and in no case shall any corridor extend more than 20 feet beyond an exit.

C. Doors separating corridors from stair enclosures shall be B Label fire rated doors and swing in the direction of exiting.

1005.02 Stairways

A. All stairways shall conform to the requirements of the State Fire Code; NFPA 101, Life Safety Code. Chapter 5 of the Life Safety Code provides details for construction and dimensions.

B. Closets, storage areas or other rooms or spaces shall not open into the stairway enclosure; nor shall such space be permitted under or over stairways.

C. Buildings of more than one story have a minimum of two stairways, located remote from each other, which provides a continuous exit to the outside. Additional stairways may be necessary, dependent upon occupant load and square footage of the floor(s).

1005.03 Exits

A. All buildings, including one room buildings or classrooms over 1000 square feet, shall have a minimum of two exits, remote from each other.

B. All exits shall comply with the State Fire Code, NFPA 101, Life Safety Code. Chapter 5, of Code, provides information for determining number, kinds, arrangement and capacity of required exits.

1005.04 Signs

A. All auditoriums, assembly areas, gymnasiums, stairways, corridors and exits should have illuminated signs marked "EXIT" in plain, legible letters (with direction arrow, if necessary).

B. Low hanging signs, ceiling lights and similar objects, signs and fixtures that protrude into regular corridors or traffic ways shall be avoided. A minimum height of 7 feet 6 inches from the floor is necessary.

1006 OTHER CIRCULATION AND TRAFFIC PROBLEMS WHICH NEED SPECIAL ATTENTION

1006.01 The plan of the drive and bus-loading platform should be such that all buses can line up in tandem, permitting children to enter the bus from the right (that is, without crossing in front or to the rear of buses). No backing up of buses will be permitted.

1006.02 Access to the school grounds should be such that pupils coming to the site do not need to walk through any part of the building to get to the playground.

1006.03 Pupil circulation to and from toilet units is simplified when these units and hand washing facilities are located as follows.

A. On normal traffic routes from instructional spaces to outdoor recreation areas
B. Adjoining playgrounds so that the building proper need not be entered by playground users
C. Near cafeteria or lunchroom

1007 DEMOLITION, RENOVATION AND ALTERATION

References:
2. N-3

Before embarking on a renovation project, there are preliminary steps which must be taken. The existing facility must be examined carefully. Information about the educational program, the community, enrollment and so forth must be assembled and analyzed. Educational goals must be clearly established and alternative solutions to the facilities problem (including renovation, renovation plus additions, demolition and replacement or new site acquisition and new construction) must be developed and compared.

1007.01 An assessment of the existing facility should include an examination of at least the following areas:

A. Program support
B. Structural soundness
C. Adaptability of the building

D. Adequacy of space
E. Aesthetics
F. Operational and maintenance efficiency
G. Condition of mechanical systems
H. Compliance with safety codes
I. Location
J. Site characteristics
K. Cost of project

1008 EMERGENCY SHELTERS

1008.01 Professional advice and assistance in the design of shelter areas for school buildings is available at no cost to architects and school boards. This service is obtained through the state Department of Emergency Services.

1009 RELOCATABLE, WOOD FRAME OR METAL BUILDINGS

1009.01 These installations shall be made only to relieve overcrowding or to provide interim housing while an approved school construction project is being planned and/or completed. Local school districts must include in their facilities plan a method and time frame for replacing these buildings with permanent structures. These buildings shall comply with all state usage guidelines, including installation of potable water and toilet facilities for early childhood (K-4), and applicable building and fire codes.

1010 SAFETY AND CLEANLINESS OF BUILDINGS

1010.01 All schools must be maintained in a safe condition. Scheduled inspections will insure that facilities are kept in a state as near to the original condition as possible at all times. Facilities shall also be kept clean and sanitary at all times by scheduled cleaning of all sections of the buildings. This shall be insured by regular inspections for compliance with scheduled cleaning tasks.

NOTES FOR BUILDING HEIGHT TABLE

(1) The work "area" means that area enclosed by exterior or foundation walls, fire barriers or a combination of exterior and foundation walls. A fire barrier is a continuous vertical membrane designed and constructed with a fire resistance rating of two (2) hours to limit the spread of fire and smoke. Fire barriers shall have protected openings.

(2) The phrase "not permitted" means that buildings of these heights are not permitted for the type of construction indicated.

(3) The phrase "Section 10-High Rise" means that the building shall also comply with Section 10 of the State Fire Code.

(4) Types of building construction indicated in the chart are located in NFPA 220, Standard on Types of Building Construction.

(5) Protection of structural members in Type I and Type II construction. Columns, girders, trusses, beams, lintels or other structural members that are required to have a fire resistance rating and support more than two floors or one floor and roof, or that support a bearing wall or a nonbearing wall more than two stories high, shall be individually protected on all sides for their length or height with materials having the required fire resistance rating. All other structural members required to have a fire resistance rating may be protected by individual encasement, by a membrane or ceiling protection which is part of an approved assembly which meets the required fire resistance rating or by a combination of both.

BUILDING HEIGHT

Type of Construction	1 story	2 story	More than 2 stories and up to 40 ft.	More than 40 feet	More than 75 feet
Type I					
443 Fire Resistive	40,000	30,000	10,000	Sec. 10 High Rise	Sec. 10 High Rise
332 Fire Resistive	40,000	30,000	10,000	Sec. 10 High Rise	Sec. 10 High Rise
Type II					
222 Protected Non-Com.	30,000	20,000	8,000	Sec. 10 High Rise	Sec. 10 High Rise
111 Protected Limited Combustible	20,000	15,000	5,000	Sec. 10 High Rise	Sec. 10 High Rise
000 Unprotected Limited Unprotected Non-Com.	7,000	4,000	All Areas Require Sprinklers	NOT PERMITTED	NOT PERMITTED
Type III					
211 Ordinary Protected	9,000	6,000	All Areas Require Sprinklers	NOT PERMITTED	NOT PERMITTED
200 Ordinary Non-Protected	7,000	4,000	All Areas Require Sprinklers	NOT PERMITTED	NOT PERMITTED
Type IV					
2HH Heavy Timber	9,000	6,000	3,000	NOT PERMITTED	NOT PERMITTED
Type V					
111 Protected Wood Frame	7,000	4,000	All Areas Require Sprinklers	NOT PERMITTED	NOT PERMITTED
000 Non-Protected Wood Frame	5,000	3,000		NOT PERMITTED	NOT PERMITTED

Chapter 11

SERVICE FACILITIES

1100 WATER/SEWAGE FACILITIES

All schools contain adequate service facilities that are designed, constructed, maintained and equipped to facilitate the operation of the school.

1100.01 Sanitary Facilities - Water Supply and Sewage Disposal
The water supply and sewage disposal systems of all schools are designed, constructed, maintained and equipped to facilitate the operation of the schools. The sanitary facilities systems meet all requirements of state and federal regulatory agencies. Toilet facilities are accessible to the physically handicapped, are provided on each floor level of the building and contain hot and cold water mixing faucets and provisions for privacy. Paper towels and toilet tissue are provided at all times. Service sinks with hot and cold water are provided in each custodial closet, in the custodial general service area and in the food service area.

1100.011 Adequate source of water supply that is both safe and potable. Tests to verify the quantity and sanitary quality must be conducted prior to the occupation of the school. The state and/or local health departments welcome the opportunity for consultation regarding water conditions prior to site selection or acquisition.

1100.012 Ample supply and storage of water should be available at all times for present and future expanded needs - at least 30 gallons per day per student for all purposes.

1100.013 Water must be safe for use, as determined by state and/or local health authorities, and maintained safe by protection of source of supply, treatment if necessary and periodic analysis.

1100.014 Sewage disposal system design requires the technical services of a sanitary engineer. The type of installation depends upon the character of the soil as determined by percolation tests, location of wells and sources of water supply. State and local health departments will provide maximum assistance in the development of approved sewage disposal systems in rural and suburban areas.

1100.015 The sanitary protection of an individual water supply and/or sewage disposal system shall be upgraded to meet current standards when any renovation or addition is to be provided at an existing school.

1100.016 All on site water supplies and extended aeration treatment sewage plants will require personnel that are properly certified by the West Virginia Department of Health to operate these systems.

1100.017 All boilers shall have an approved back flow preventer device placed on the make-up water line to prevent contamination of the potable water supply. All laboratories shall be isolated from the remainder of the school by an approved back flow preventer device on the water line. Back flow preventer devices are to be shown on plans submitted for review and included in the specifications to the West Virginia Department of Health.

1100.018 The required ratio of water closets, urinals, lavatories or wash fountains and drinking fountains shall be maintained when a renovation or an addition enlarges the school population.

1100.02 Toilet Facilities

Federal regulations demand that toilet rooms shall have at least one toilet stall that has the following:

A. 3 feet wide
B. At least 5 feet 6 inches deep
C. Door that is 32 inches wide and swings out
D. Handrails on each side, 32 inches in height and parallel to the floor
E. Water closet with the seat height between 17 and 19 inches from the floor

Toilet and facilities must conform to U.S.A. Standard Specifications for making buildings accessible to and usable by the orthopedically impaired. American National Standards Institute, 1430 Broadway, New York, N.Y. 10018.

1100.021 Toilet facilities should be provided for both sexes on each floor level of school building. Some economy may be achieved if toilet rooms are located adjacent to each other with common utility space between for servicing; the same is true in multi-story buildings, where toilets may be located one above the other.

1100.022 Entrances to toilet rooms must be designed to prevent visibility from the corridor. Toilet room doors must be self closing.

1100.023 Toilets for public use should be conveniently available to the auditorium, gymnasium and other parts of the building commonly used by the public. Students' general toilet rooms may be strategically located for public use in some cases.

1100.024 Toilet room floors, preferably, should be of ceramic tile or similar impervious masonry material.

1100.025 Wall surfaces should be of impervious material, such as glazed tile, to a height of at least 6 feet, and preferably to the ceiling.

1100.026 Provide stall toilet partitions with doors of smooth nonporous material. These should be securely anchored.

1100.027 Floor drains, hose bibbs and cleanout plugs should be provided in gang toilet rooms.

1100.03 Plumbing Fixtures

1100.031 Service sinks with hot and cold water should be provided in each custodian's closet, in the custodian's general service room and in the cafeteria-kitchen. Vacuum breakers may be needed on sink water lines.

1100.032 Hydrants, tamper proof and frost proof, should be provided at least every 120 feet around the perimeter of the building. Underground stop and waster cocks shall not be permitted on frost proof hydrants.

1100.033 All piping and valves in the plumbing system should be tagged for identification, and a chart of plumbing layouts should be readily accessible in the head custodian's room.

	SCHOOL TYPE		
	Elementary	Secondary	Notes:
Water Closets:			
Ratio: Female	1-35	1-45	Ratio in elementary schools applicable only when general facilities are provided. In other school, provide a minimum of two in gang toilets. U-type seats for commodes. Provide toilet paper in dispensers at all times.
Male	1-40	1-75	
Height:	13 inches	15 inches	
Urinals:			Not required in toilet rooms of individual instructional spaces.
Ratio:	1-30	1-30	
Height:	18-20 in.	22-24 in.	
Lavatories & Wash Fountain:			Cold and temperate water (maximum 115 degrees F.) with mixing faucet.
Ratio:	1-50	1-50	
Height:	24-27 in.	30-32 in.	
Drinking Fountains:			Lavatories to include hot and cold water mixing faucet, sanitary towels In a dispenser and hand cleaner. Preferably, separate fixtures.
Ratio:	1-75	1-75	
Height:	24-28 in.	32-36 in.	

NOTE: See Chapters 4, 5, 6, 7 and 8 for additional fixture requirements in special areas of the building.

1101 ELECTRICAL SERVICE

Reference:
14. National Electrical Code

The electrical system of each school is designed, constructed, maintained and equipped to facilitate the safe operation of the school. The electrical system provides adequate service for present and anticipated loads to insure maximum efficiency and meets all requirements of applicable state regulatory agencies.

1101.01 All electrical service shall comply with the National Electrical Code.

1101.02 Adequate electrical service for present and anticipated loads should be provided to insure maximum efficiency.

1101.03 All transmission wiring systems should be in separate conduits.

1101.04 Wherever feasible and possible, electrical service should be brought into a meter and switch room specifically designed for this purpose and appropriately located within the school building.

1101.05 A directory shall be provided for electrical panel boards, and a schematic plan of the electrical systems should be available in the head custodian's office.

1101.06 In all shops, master controls shall be strategically located to shut off machines in case of an emergency.

1101.07 All electrical equipment used in the school shall be properly grounded and protected against electrical surges that might damage the equipment.

1102 AUDIOVISUAL FACILITIES

All schools shall be designed, constructed, maintained and equipped to provide the audiovisual facilities required for the educational program of the school.

1102.01 Instructional spaces and production areas should be furnished to permit the use of all types of audiovisual materials and equipment.

1102.02 Adequate provision for controlling the light level in instructional areas is essential. For efficient use of projection-type materials, the light in the room, particularly in the area of the projection surface, should not exceed one-tenth footcandle.

1102.03 Duplex service receptacles should be installed on all walls of the instructional space for the use of instructional equipment. Sufficient branch electrical circuits service should be in each room.

1102.04 Where there are to be specialized facilities, such as language labs, study carrels, micro-teaching and television, provision should be made for electrical service in the floor.

1102.05 Conduits shall be provided to permit future installation of computer terminals, television and other electronic instructional devices.

1102.06 System conduits shall be of sufficient size to provide for installation of television and other teaching devices.

1102.07 A projection surface should be permanently installed in each instructional area with provision for eliminating keystoning.

1102.08 Media production centers and photographic darkroom facilities should be provided with adequate sinks for hot and cold running water.

1102.09 Adequate ventilating facilities, including exhaust fans, shall be installed in production areas for the removal of fumes resulting from the use of rubber cement and other chemicals.

1102.10 For preservation of book and nonbook materials and equipment, temperature and humidity control are essential. Air conditioning of media centers and production areas is a must.

1102.11 Use of audio devices mandates acoustical treatment of walls, ceilings and floors in instructional areas and media centers, particularly in open-type classrooms where many activities are occurring simultaneously.

1102.12 Adequate display and exhibit facilities, including such things as magnetic boards, chalkboards, bulletin boards and show cases, are required.

1102.13 Adequate storage facilities for materials such as supplies, book and nonbook materials and equipment are required.

1103 COMMUNICATION AND PROGRAM FACILITIES

All schools are designed, constructed, maintained and equipped to facilitate adequate intercommunication among major areas of the school plant. All schools contain a master clock, a signal and tone system and telephone for outside communication.

1104 FIRE ALARM SYSTEM

References:

14. National Electrical Code - Supplement A
15. West Virginia Fire Code
16. Life Safety Code 101 and National Fire Code

1104.01 Fire alarm signals shall be of the continuous type, shall be distinctly different from all other signals or sounds and shall comply with the State Fire Code.

1104.02 Signals providing alarm to other potential emergencies shall be distinctly different from the one used to evacuate the building in case of fire.

Chapter 12

OTHER FACILITIES

1200 ENGINEERING AND CUSTODIAL FACILITIES

All schools are designed, constructed, maintained and equipped to provide adequate and appropriate space and services for custodians. All schools are equipped with custodial and engineering areas, individually accessible to a service drive, with exterior doors sized to permit removal of room equipment or delivery of supplies. The areas are isolated from student occupied areas by location and/or treatment. Custodial closets are located within the school in strategic and convenient areas. Adequate facilities are provided for storage of supplies and equipment, and adequate provisions are made for waste disposal. Each custodial service facility is in compliance with all requirements of appropriate state regulatory agencies.

1200.01 Heat Plant - Size
Area as needed.

1200.02 Heat Plant - Location
- A. Directly accessible to service drive, with exterior doors to permit removal of room equipment.
- B. Isolated from pupil-occupied areas by location and/or treatment.

1200.03 Heat Plant - Equipment and Facilities
As needed, with provision to permit expansion, if necessary.

1201 RECEIVING, STORAGE AND WORK ROOM

1201.01 Size - Area as Needed - Approximately 250 square feet

1201.02 Location - Direct access from the service drive

1201.03 Equipment Space and Facilities
- A. Shelving in a variety of depths and heights to provide temporary storage for supplies and equipment delivered to the school and custodial equipment not used daily, such as ladders, vacuum cleaners and scrubbers. Shelving should be of fine resilient construction.
- B. Provide work bench equipped with vise and storage for small

hand and power tools used in minor repair

C. Grounded duplex receptacles over work bench at three feet intervals

D. Storage lockers under bench

E. Wide doors sized to permit passage of large, bulky equipment and supplies

F. In multistory buildings, a freight or service elevator for conveyance of supplies and equipment and use by the handicapped is needed.

1202 GENERAL REQUIREMENTS

1202.01 Adequate and appropriate space, facilities and services should be provided for the custodians, including locker, shower, toilet and lavatory.

1202.02 In large schools, it is desirable to provide an office for the head custodian near custodial quarters. These facilities will be available for preparing and filing reports, preparing requisitions, schedules and records and for holding private conferences.

1202.03 Some school buildings, particularly large high schools, have laundry facilities for cleaning physical education, food service, custodial and other equipment and supplies. Automatic drying machines may require venting to the outside. Compliance to the State Fire Code is necessary.

1202.04 Since portable electric floor cleaners are frequently used, ample electrical outlets shall be located at convenient points not more than 75 feet apart in corridors and rooms. See Chapter 11, Section 1101.

1203 LAWN TOOL EQUIPMENT STORAGE ROOM

1203.01 Size - 50 to 100 square feet

1203.02 Location - Direct access from out-of-doors

1203.03 Equipment Space and Facilities
Shelving and space to permit easy storage of lawn mower, lawn tools and snow removal and other equipment needed in the care of the school grounds.

1204 POWER, METER AND SWITCH ROOM

1204.01 Size - Area as needed

1204.02 Location
- A. Convenient access from the boiler room and custodian's area
- B. Location to avoid damage from water or moisture

1204.03 Equipment Space and Facilities
Electrical panels, meters and switches needed to provide electrical service in the building. See Chapter 11, Section 1101.05.

1205 INCINERATOR AND WASTE ROOM

NOTE: An incinerator may be installed to burn refuse. The incinerator (either indoor or outdoor) and space occupied thereby, should be chosen with special consideration given to daily disposal of waste. Fire hazards, fire insurance rates and ecology also must have careful consideration. Incinerators must be of a type that meets the construction and air quality control standards of the State Department of Health, State Fire Code and the West Virginia Air Pollution Control Commission. The use of compactors and haulaway service are alternative methods.

1205.01 Size - Area as needed

1205.02 Location - Easy access from the custodian's room and heating plant.

1206 LOCKER/DRESSING ROOMS

1206.01 Size - 75 to 100 square feet

1206.02 Location - Adjacent to custodian's room

1206.03 Equipment Space and Facilities
- A. Lockers
- B. Mirror
- C. Chairs or benches
- D. Toilet
- E. Shower

1207 CUSTODIAL CLOSETS

1207.01 Size and Number - Area as needed

1207.02 Location
Strategically located along corridors, a minimum of one per floor, and in food service area to reduce the travel necessary to properly maintain a healthful and clean school.

1207.03 Equipment Space and Facilities
A. Service sink with mud trap and hot and cold water
B. Shelving for various cleaning supplies and equipment
C. Storage space for mops and brooms

1208 STORAGE OTHER THAN CUSTODIAL

1208.01 Firesafe vault or fire-resistive files shall be available in the administrative area for storage of pupil and school records and valuables.

1208.02 Government donations of surplus foods, some of a bulky nature, may create a need for substantial storage space located convenient to the cafeteria-kitchen. Additional refrigeration or freezer space may also be needed.

1208.03 Appropriate provisions shall be made for the storage of wraps of students, teachers and other school employees. No single plan for such storage can be applied to all schools. Whatever plan is adopted, the following factors should be considered.
A. Convenient for individuals wearing the clothing
B. Safe from theft or vandalism
C. Sanitation
D. Adequate ventilation
E. Orderly arrangement in appearance
F. Economy of provisions

1209 MISCELLANEOUS SERVICE FACILITIES

1209.01 Parking spaces, walks and entrances should be adequately lighted, chiefly by floodlights located at strategic points within or upon the building, or upon poles or standards.

1209.02 Parking space should be provided for automobiles of school employees, visitors and students who drive their own cars to school. Frequently, parking space must also be provided for school buses which are idle during the day. Such parking space, if possible, should be screened from the view of the general public.

1209.03 Approximately five percent of the parking spaces should be identified for use by the physically handicapped. The parking spaces should be open on one side, allowing room for individuals in wheelchairs or on braces or crutches to get in and out. Level surfaces are preferred.

1209.04 In laying out bus and traffic patterns, it should be remembered that discharge or pick-up of students at loading/unloading zones must always be from the side of the vehicle opposite the driver and toward the building. Backing up of buses will not be permitted.

1210 ACCESSIBILITY OF FACILITIES

Reference:
5. A - 117.1

All schools are designed, constructed, maintained and equipped to provide a barrier-free environment and maximum accessibility by the handicapped to all floors. All facilities are in compliance with the requirements of state and federal regulatory agencies concerned with accessibility to the handicapped.

Chapter 13

ENVIRONMENTAL CONTROLS

1300 COMMON ENVIRONMENTAL FACTORS

All schools are designed, constructed, furnished and maintained in a manner which incorporates all existing technology into the common environmental factors which facilitate the educational program of the school. Spatial and aesthetic considerations are incorporated into the school design, construction, equipment and maintenance. The thermal, visual and acoustical systems are balanced in a manner which properly controls the environment and facilitates the educational program of the school.

School facilities must be in compliance with the requirements of the state Fire Code, state Health Department and other regulatory agencies.

1301 THERMAL ENVIRONMENT

References:

2. I-16 and G-2,3
17. Climatological Data for West Virginia
18. American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.
19. Energy Consumption Guidelines for Educational Facilities

The school facility is designed, constructed, equipped and maintained in a manner which provides for maximum comfort and economy. The heating, ventilating and air-conditioning systems in all school facilities are in compliance with the requirements of applicable state regulatory agencies.

1301.01 Minimum functions of the space conditioning system employed to maintain the proper thermal environment in a school building are as follows.

1. Supply heat for warm-up and balance heat losses from the room to the outside.
2. Supply tempered outside air for the removal of excess heat.
3. Dilute and remove unpleasant odors by ventilation.
4. In special cases, the system must remove injurious or noxious gases, vapors, fumes and dust by the induction of outside air or by filtration.

With the increasing tendency toward longer school terms and, in some cases, year-round use of physical plants, it is recommended that serious consideration be given to summer air conditioning to provide the desired level of environmental control.

1301.02 Space conditioning systems should be of sufficient rated capacity to meet the building requirements under extreme local weather conditions. This will avoid sustained operation beyond the capacity of the system. Outdoor design temperatures shall be based on climatological data collected by the U.S. Department of Commerce.

1301.021 Operative Temperature

Heating systems of conventional design should provide the following temperatures.

A. Instructional spaces, auditoriums, offices and cafeterias - 68 degrees F, measured 30 inches above the floor

B. Closed corridors, stairways, shops, laboratories and kitchens - 68 degrees F, measured 60 inches above the floor

C. Activity rooms, such as gymnasiums - 65 degrees F, measured 60 inches above the floor
Special cases: Toilet rooms - 65 degrees F, locker rooms and showers - 78 degrees F and swimming pools - 83 degrees F, each measured 60 inches above the floor.

D. The maximum temperature gradient from floor to 60 inches above the floor should not exceed three degrees.

1301.022 Air supply

Space conditioning systems should have sufficient capacity to provide for introduction of outside air as follows:

A.	Classrooms	8 cubic feet per minute/person
	Library	8 cubic feet per minute/person
	Auditorium	7 cubic feet per minute/person
	Corridors	.02 cubic feet per minute/feet squared
	Utility Rooms	.02 cubic feet per minute/feet squared
	Offices	20 cubic feet per minute/person
	Meeting Rooms	35 cubic feet per minute/person
	Teachers' Lounge	35 cubic feet per minute/person

B. If air conditioning is not provided, 12 to 15 air changes per hour may be desired in auditoriums or other assembly space in summer.

1301.023 Air Movement

Air motion, with proper distribution and without drafts, is essential in educational facilities. Also, important are effective air cleaning, positive temperature control, low noise level and acceptable humidity conditions.

A. Air motion should generally fall within a range of 25 to 50 linear feet per minute and should be maintained at a constant rate with a pattern that prevents temperature stratification.

B. Special provisions may have to be made in the window zone to overcome the effects of cold window down draft.

C. Since positive pressure is usually desirable in conditioned areas, approximately 10 percent more air should be applied than is exhausted, thus minimizing infiltration.

1301.024 Humidity Control

While normal comfort conditions may be maintained with a wide range in relative humidity, it is desirable that actual levels not fall below 30 percent nor exceed 70 percent. This may require the installation of humidification equipment for winter use, while air conditioning may meet dehumidification requirements during warmer weather. It should also be stated that very dry conditions contribute to eye, nose, and throat irritation, while higher moisture promotes unhealthy mold growth.

NOTE: Special requirements for libraries, resource rooms and music facilities.

1301.025 Air Cleaning

Air cleaning is essential in areas where the air is heavily laden with dust or smoke. Filtering, washing, screening, precipitation, absorption or other cleaning methods may be used.

1301.026 Radiant Temperature

Reduced radiant temperatures are usually compensated for by increased air temperatures. Special treatment of the window zone may be desirable to compensate for the greatly reduced radiant temperature there as compared with the rest of the room.

1301.03 Some form of cooling system is desirable, and may be essential, for schools in areas where the outside temperature is above the optimum during a portion of the school year.

1301.04 Determining the type of heating and ventilating system to be used is a highly technical problem dependent upon the original cost, the operating cost, the maintenance services available, the size of the building, the level of student comfort which can be economically obtained and, in some instances, the designer's preference. Technical advice concerning the type of heating and ventilating system to be utilized should be secured from consulting engineers qualified to deal with heating and ventilating problems. Because of the many different types of environmental systems available, the variations in owning costs by type installation and the relative costs of competing energy sources, the architect and/or engineer must make an in depth study to determine the best and most economical system and energy used to meet the objectives of the school board regarding space conditioning.

1301.05 Zone control heating and ventilating systems should be provided in order to secure the maximum utilization of facilities and the greatest economy in operation. Special education centers require special room control to satisfy student needs. Controls shall be a type that will permit easy interfacing of energy management systems.

1301.06 Boards of education, before accepting the heating contractor's work, should receive complete written instructions regarding the operation and maintenance of the mechanical equipment and should insist that a designated school employee be given direct instruction by one or more competent representatives of the contractor or equipment firms.

1301.07 Inspection of Systems
The specifications should require an independent consulting engineering firm or other qualified individuals to inspect, balance and evaluate the finished system before title passes to the school board to assure that the system is installed as designed and is

operating according to specifications.

NOTE: Warranties and brochures should be furnished to the board by the installation contractor on all equipment.

1301.08 The architect/engineer shall analyze the facility for its total energy efficiency and shall certify the energy usage in BTU/Gross S.F./Year. Energy usage must be within guidelines established by the Fuel and Energy Office, Governor's Office of Economic and Community Development.

1301.09 Interior Air Quality Standards

A. There shall be no open-flame, fuel burning heaters in student and staff occupied spaces. This equipment shall be located in enclosed rooms or cabinets using outside air for combustion and be properly vented to the outside in a manner that exhausts all fuel gases.

B. Materials which, under normal use conditions, may release formaldehyde in excess of .1 parts per million or asbestos dust, or which contribute to levels of indoor air pollutants considered potentially harmful to human health, shall not be permitted in building systems.

C. Pesticides used for termite and rodent control shall not be used at levels that might cause contamination of air quality in interior spaces.

D. Fresh air intakes shall be located to disallow contamination from stacks, vents or motor vehicles. Stacks shall be designed to completely exhaust flue gas away from the building.

1302 VISUAL ENVIRONMENT

Reference:

20. Lighting Handbook, Illuminating Engineering Society

The school facility is designed, constructed, equipped and maintained in a manner which provides a good visual environment. The facility is attractively painted and illuminated in a manner which most effectively contributes to an environment of visual accuracy and comfort. All schools are in compliance with requirements of applicable state regulatory agencies.

1302.01 General

1302.011 Technical assistance from qualified lighting engineers is generally required to insure adequate visual conditions within spaces.

NOTE: Electric power companies usually employ competent lighting engineers who may assist in finding solutions to lighting problems.

1302.012 Plans and specifications for new plants should be developed to achieve as many of the desired lighting goals as possible in the original construction with due consideration for the need of maintaining a balance between the visual and other major environmental factors.

1302.013 Proper visual environment lessens the expenditure of energy required for students and teachers to carry on visual tasks in the instructional space.

1302.014 A sufficient quantity of light is essential for good visual conditions. However, a task becomes visible, not by the light falling upon it, but by reflected brightness.

1302.015 Visual comfort and efficiency may best be achieved in an environment in which the brightness difference would be as small as possible between the task and the brightest surface and between the task and the darkest surface in the total visual field while the general level of illumination is high.

1302.016 Informal seating in the instructional space has gained wide acceptance. The visual field, therefore, must be recognized as encompassing all four walls, the floor and the ceiling.

1302.02 Desirable Brightness

1302.021 In an instructional space, the brightness of any surface viewed from any normal sitting or standing position should not be excessively greater than the brightness of the visual task. As the high brightness of surfaces in the visual field approaches the brightness of the task, visual comfort and efficiency increase. Present research indicates that, with a 30 footcandle level of illumination, the highest acceptable brightness of any surface in the visual field should not be greater than 10 times the brightness of the task. Above 30 footcandles, the brightness ratio should decrease as the footcandles increase.

1302.022 In an instructional space, the brightness of any surface viewed from any normal standing or sitting position should not be excessively lower than the brightness of the visual task. As the low brightness of the surfaces in the visual field approaches the brightness of the task, visual comfort and efficiency increase. Present research indicates that the lowest acceptable brightness of any surface in the visual field should not be less than one-third the brightness of the task.

1302.023 The brightness of surfaces immediately adjacent to the visual task is more critical in terns of visual comfort and efficiency than that of more remote surfaces in the visual field. These adjacent surfaces have lower acceptable brightness limits than surfaces farther removed from the task. Present research indicates that surfaces immediately adjacent to the visual task should not exceed the brightness of the task.

1302.024 The brightness difference between adjacent surfaces in the total visual field should be reduced to an acceptable minimum.

1302.025 The characteristics of any lighting system should be such that direct and reflected glare are not objectionable. If the brightness difference produced by a lighting system is held within the limits stated in Goals 1, 2 and 3, of Lighting Handbook, direct and reflected glare will not be objectionable.

1302.026 Daylight and electric light systems should conform to the same brightness and brightness difference goals, and both systems should be coordinated in design to assure the effective contribution of both.

1302.027 Any lighting system should be designed in such a manner that it will contribute to a cheerful, friendly and aesthetically pleasing instructional space environment.

1302.028 The brightness goals stated above assume an illumination level of range 30 to 150 footcandles on the reference task produced by combined radiant energy of daylight and any system of electric lighting used.

1302.03 Light Source

1302.031 Electric lighting systems should be evaluated on the basis of the following items:

A. The lighting should produce a uniform distribution of shadow-free and glare-free illumination with the intensities necessary to maintain an acceptable brightness balance between the tasks and other surfaces within the total visual environment.
B. Consideration should be given to probable deterioration of service efficiency under prevailing conditions of school operation and maintenance.
C. Lighting fixtures should not produce a surface brightness on the fixture or on the ceiling that exceeds ten times the task brightness.

1302.032 Where daylight supplements artificial illumination, controls (preferably fixed) should be as follows.

A. Exclude direct sunlight and at the same time admit about 15 percent of the outdoor brightness
B. Provide a surface free from excessive brightness or glare
C. Permit ease of maintenance

1302.04 Surfaces within rooms should be finished in accordance with the following items.

1302.041 Ceilings should provide a 70 to 90 percent reflection factor, flat, white surface.

1302.042 Upper walls (from wainscot or dado upward) should provide a surface with a reflection factor of at least 60 percent.

1302.043 Lower walls (from wainscot or dado downward) should provide a surface with a reflection factor of at least 60 percent.

1302.044 Where maintenance conditions permit, it is considered good practice to finish entire walls, from ceiling to floor, with surfaces having a 60 percent reflection factor.

1302.045 Finishes should be flat or matte on all interior surfaces, particularly at eye level or above.

1302.046 Trim should provide a surface with a 40 to 60 percent reflection factor.

1302.047 Desks and equipment should have finishes that fall within the 35 to 50 percent reflection factor range.

1302.048 Floor finishes should fall within the 30 to 50 percent reflection factor range.

1302.049 Chalkboards are available with practicable maximum reflection factors of 20 percent. This high factor range is practical only when the level of illumination is sufficiently high to overcome the loss in visibility due to reduced brightness difference between chalk and the light colored board.

1303 SONIC ENVIRONMENT

The school facility is designed, constructed, equipped and maintained in a manner which provides for the control of sound within a particular space so that internal sound can be heard well and unwanted sounds are prevented from intruding from the outside environment.

1303.01 General

1303.011 A sonic engineer should be consulted when designing educational spaces.

1303.012 Although it is often impossible to prevent the creation of unwanted noises, it is both possible and practicable to prevent excessive noises which inhibit hearing and create distractions.

1303.02 Zoning

1303.021 The concept of zoning as related to sound engineering revolves about the basic premise that prevention is better than correction.

1303.022 Site

A. Every effort should be made to acquire a site that has a relatively low ambient noise level.

B. If a noise site cannot be avoided, then it is necessary to locate the school's noisy activities nearest the outside noise source.

C. Planting of trees, bushes and shrubs around the perimeter of the site, particularly on noisy sides, will provide added noise reduction.

1303.023 The Building

A. It is important, where possible, to group noisy activities with other noisy activities, such as playgrounds, gymnasiums, music areas and shops.

B. Administrative facilities, general instructional spaces, media centers and other similar areas should be grouped together in a quiet zone somewhat removed from noisy activities.

C. Intermediate between the two extremes may be typing or bookkeeping rooms where machines are used, the cafeteria and home economics facilities.

D. If these various activity levels are not adequately separated by space, then it is necessary to intercept these noises to he degree necessary to prevent them from conflicting with each other.

1303.024 Instructional and Service Facilities

A. Administrative Offices

1. Noise reduction by treatment, in the form of absorbent materials, is invariably mandatory to keep speech levels low and to keep sound from office machines and traffic noise at a minimum.

2. It is advisable to provide sound-intercepting barriers to keep noisy activities in some administrative rooms from interfering.

B. Corridors

1. Unless adequate noise reduction treatment is provided in corridors, they act as communication channels conveying a sound or noise throughout the building.

2. Acoustical treatment in such passageways should be placed on the ceiling and may also

be placed on walls. Carpet is a good noise reducer.

3. Undesirable noise may be reduced by proper attention to non-parallel floor or walk surfaces and ceiling surfaces.

C. Instructional Spaces
  1. Instructional spaces should be treated for noise reduction.
  2. The degree of sound interception requiring instructional space boundaries depends upon adjacent activities.
  3. In the case of certain business education rooms, noise reduction treatment is to be preferred over critical reverberation control, and the boundaries must have a higher degree of sound interception, particularly where such rooms are near or next to the more academic-type instructional spaces.

D. Media Center
  1. Noise reduction treatment, coupled with adequate sound interception, is a primary requisite in this area, where there may be disturbing and/or distracting sound from a nearby activity.

E. Shops
  1. Adequate noise reduction treatment is essential, and adequate interception should be provided in the boundaries.
  2. Where doors are left open, shop layouts must be oriented so that openings are away from academic and similar activities.

F. Cafeterias
  1. An environment with a somewhat critical reverberation control (with particular stress upon sound absorption in the high pitches) is desirable.
  2. Kitchens should have considerable noise reduction treatment because the noise from a reverberant kitchen can be conducted to the dining room area.

G. Gymnasiums
  1. An environment with a somewhat critical reverberation control is usually desirable.

2. Where facilities are near quiet areas, adequate interception must be built into the boundaries.

H. Toilets

Better-planned schools provide noise reduction treatment in rest rooms, as well as special sound interception measures within the room boundaries.

I. Music Rooms

1. Choral, band and orchestral rehearsal rooms require critical reverberation control over a wide range of pitches.
2. Maximum noise reduction is not the correct solution.
3. For information concerning the environment in rehearsal rooms, see Geerpes, Harold P., Planning and Equipping Educational Music Facilities, Reston: Music Educators National Conference.
4. Individual practice rooms are usually most satisfactory when provided with maximum noise reduction treatment.
5. Maximum sound interception is advisable.
6. Special attention should be given to insure that strategic walls are not reduced in interception by the insertion of clocks, electrical outlets or ventilating grills.
7. Ducts in ventilating systems should be given special treatment to prevent transmission of sound.

J. Auditoriums

1. From the standpoint of noise control, the auditorium is one of the most critical rooms in the entire unit or plant.
2. The level of noise (including that from the ventilating system, heating system, water supply and external sources) must be kept low.
3. Adequate barriers must be provided to intercept sounds from such sources as traffic and mechanical equipment room.
4. The proper acoustical environment of the auditorium is a highly scientific problem, therefore, technical assistance should be secured in order to provide a reasonable environment.

1304 SPATIAL AND AESTHETIC ENVIRONMENT

The school facility is designed, constructed, equipped and maintained in a manner which provides an efficient and attractive facility.

1304.01 It is usually recognized that an impression of beauty - the aesthetic aspect of conditioning spaces, both indoors and outdoors - should be the building's primary effect upon occupants and visitors.

1304.02 The school plant, when truly functional, is beautiful because it fulfills, not only a physical function, but also an emotional function.

1305 BALANCED CONDITIONING OF SPACES

1305.01 Designing to achieve adequate and economical conditioning of educational spaces must be done by persons highly specialized in each of the separate major fields involved.

1305.02 Factors involved in the conditioning of spaces for education include the following items.

A. Spatial
B. Thermal
C. Visual
D. Sonic
E. Aesthetic

1305.03 A crucial problem in good planning is to be aware of, and to guard against, the disposition of each design specialist to overdo the solution in his particular field. Balancing solutions among the specialized design fields becomes one of the most important responsibilities of the administrator and architect.

1305.04 Balance in providing adequate space, and in conditioning it for safety and educational usefulness, results from a defined and executed school district policy.

1305.05 School district policy should require, as a minimum, that school house conditioning be comparable to that used in non-school structures, such as homes, offices, government buildings, churches, clubs and lodge halls.

1305.06 If comparable structures generally do no meet acceptable criteria, then it may be that school conditioning should set an example.

1305.07 When balance is threatened by inadequate funds or high bids, a defensible procedure in making plan and specification cutbacks is one based upon priorities carefully established before the actual time for decisions. Such a list should also identify those provisions that should not be deleted nor seriously compromised because of their importance to the following items.

A. The safety, health and comfort of teaches and students
B. The operational success of the educational program
C. The protection of he investment in the building
D. The maintenance and repair budget

1305.08 Reductions in building areas should be made on the basis of complete facilities and services, rather than by reduction that is below good practice of the dimensions of facilities retained. Temporary elimination of some spaces is preferred to overall reduction in quality.

1305.09 The complexities of school planning require nothing less than the highest available architectural, engineering and technical competence in the various environmental areas if planners are to realize the long-term aims of comfort, efficiency, economy, as well as reduce the initial cost of construction.

1306 FIRE INSURANCE

1306.01 Some economy in the lift time operation and maintenance of a building may be achieved when future fire insurance assessments are considered in the planning stages.

1306.02 Items Affecting Insurance Premiums

A. The building's exposure to adjacent properties not under the jurisdiction of the Board of Education
B. The location and treatment of "hot spots" - potential hazards - within the building
C. The degree of internal and external protection, such as heat and smoke detectors, sprinklers, extinguishers and alarms
D. The degree of fire-resistance of component construction materials and of the building totally

1306.03 For new construction, insurance values and costs can be estimated by having plans and specifications reviewed by the West Virginia Board of Risk and Insurance Management.

1307 ROOF SLOPES

1307.01 Unless waived in exceptional circumstances, all roof areas shall have a minimum slope of 1/4" per foot. This shall include roofs with built-up membrane, as well as single-ply membrane systems.

Chapter 14

STATUTES, PROCEDURES, AND TASKS

1400 RELATED INFORMATION - STATUES

Reference: 8.

1400.01 School construction or improvement projects are frequently influenced or regulated by various statutes of the Code of West Virginia. Listed are sections with which school personnel should be familiar.

CHAPTER	ARTICLE	SECTION	SUBJECT
10	2	1-5	Public Recreation & Playgrounds
10	2A	1-26	Athletic Establishments
11	8	5-32	Levies
11	10	11d	Prerequisite to final settlement with state or political subdivision contractor; penalty
13	1	2-4	Bond Issues for Original Indebtedness
16	1	7	Board of Health; Promulgation of rules and regulations
16	1	9	Supervision over local sanitation
18	3	9a	Authority of state superintendent as to fire hazards and safety of buildings
18	4	10	Duties (5): Close temporarily a school when conditions are detrimental to the health, safety or welfare of the pupils
18	4	11	Other powers and duties (3): Recommend for condemnation buildings unfit for school use
18	5	5	County Board of Education: Exemption of school property from legal process and taxes
18	5	6	Validation of titles to land in possession of board
18	5	7	Sale of school property; oil and gas leases
18	5	8	Condemnation of land necessary for educational purposes
18	5	9	Schoolhouses, buildings and equipment
18	5	10	Approval by state board of plans and

			specifications for buildings
18	5	11	Joint establishment of schools
18	5	12	Bond of contractors
18	5	13	Authority of boards generally: consolidation; transportation of pupils
18	5	13a	School closing or consolidation

CHAPTER	ARTICLE	SECTION	SUBJECT
18	5	25	Duties of superintendent as secretary of board (3) & (4)
18	5	36	Payment for fire services on public school property
18	6	1	Driver Education
18	9	1-8	School Finances
18	9D	1-16	School Building Authority
18	10F	1-6	Disabled Persons and Public Use Buildings and Facilities: Elimination of structural barriers in public buildings
21	5A	1-11	Wages for Construction of Public Improvements
29	3	19	Fire Prevention and Control Act: protection
29	12	5a	State Insurance: WV Board of Risk and Insurance Management
30	12	2	Use of title "architect"
30	13	13	What plans of state political subdivisions to be approved by registered engineer
38	2	39	Public buildings; bond of contractor; no lien in such case
47	5	1-3	Safety glazing material in hazardous locations
54	1-2	1-11	Eminent domain
61	10	15	Pecuniary interest of county and district officers, teachers and school officials in contracts; exception; offering or giving compensation; penalties

1401 INCLUSION OF PLANS IN COMPREHENSIVE EDUCATIONAL FACILITIES PLAN (CEFP)

1401.01 Regulations of the West Virginia Department of Education and West Virginia Code 18-9D-16 require all plans for new construction, additions or renovations, major improvements, closings, and grade reconfigurations to be included in the CEFP. The CEFP must be amended to include projects deemed necessary by the county board of education but not included in the original CEFP.

In order to ensure that the state board and the SBA be fully informed about proposed amendments to comprehensive plans, the following conditions must be satisfied:

A. All requests for amendment to CEFPs, including budget amendments, must be signed by the county superintendent and must show the date such amendments were approved by the county board of education.

B. Changes in comprehensive plans may not be implemented prior to State Board of Education approval and, for those projects receiving SBA funds, SBA approval.

C. All amendments must be fully explained; substantive changes must be accompanied by complete justification with data addressing the subjects of enrollment, facilities, finance, personnel, transportation and educational programs.

D. The proposed amendments shall include evidence of citizen awareness of changes in the comprehensive plan.

E. Approval of the closure by the State Board of Education automatically amends the CEFP. However, this does not assure SBA funding of a related project.

1401.02 Submission of the Educational Specifications - SBA Funded Projects

Once the educational planning committees are established their objective should be to plan the educational program for the facility. This document must define the learning activities, the number, groupings of the students with staff and the space relationship between areas of the facility and describe the type of furniture and equipment needed to support the desired program. Once completed one copy of this document must be submitted to the SBA for review and approval before proceeding to the schematic design phase of the project.

1401.03 Submission of Schematic Design Plans, Specification and Budget Estimates - SBA Funded Projects

Once the educational specification has been approved by the SBA, the schematic design of the facility can proceed. Schematic design drawings, final educational specifications, building outline specifications and the initial estimate of probable construction cost must be submitted to the SBA for review and approval. Provide one set of each required document. The LEA and architect should not proceed further on the building design until SBA approval is secured.

1401.04 Submission of Design Development Plans and Specifications for Individual Projects

Once the comprehensive plan has been approved, individual project planning should be implemented. Under statutory authority and regulations, approval of plans and specifications for the construction of new buildings, additions and renovations is required by the state Board of Education, the SBA when SBA funds are utilized, West Virginia Division of Health, West Virginia Division of Highways when new construction, and the State Fire Marshal's Office. The Local Education Agency (LEA) and project architect shall be responsible for securing approval of design development plans from each of these agencies.

1401.05 Plan Review Process - Design Development Plans

The LEA and project architect are responsible for distributing educational specifications, design development drawings, outline specifications and P-1 form for project approval. Documentation must be provided to the State Department of Education, and to the SBA. The LEA will distribute plans to the state regulatory agencies in the following manner.

A. One set of plans and specifications and the application for project approval (P-1) to the West Virginia Department of Education.
B. One set of plans and specifications to the West Virginia Division of Health
C. Two sets of plans and specifications to the West Virginia Fire Marshal's Office
D. If new, one set of plans and specifications to the West Virginia Division of Highways

E. If SBA funds are being utilized, one set of plans and specifications to the SBA
F. See Chapter 14, Section 1401.07 regarding plan approvals.

1401.06 Interagency Review

Each month a meeting, conducted by the coordinator of school transportation and facilities of the State Department of Education, is held with representatives of the state regulatory agencies. Individual project plans and specifications are reviewed and discussed, and the comments of each agency reviewer are noted. Plans and specifications not received on or before the first Wednesday of the month will not be reviewed at the current month's meeting. These will be discussed at the next monthly meeting. Staffing of the state regulatory agencies is such that in many cases review cannot be accomplished within the 30 day time frame.

Therefore, in order to insure review and approval prior to planned construction, a 60 day period should be set aside for plan review. If all requirements have been met, the project is then recommended to the State Board of Education, and SBA if applicable, for approval. After the meeting, the county superintendent is notified of the status of his project. Projects shall not be advertised, contracts awarded, or construction started until the plans and specifications are revised to conform with the review comments.

1401.07 Plan Review Process - Final Plans

Approval of preliminary, design development or final construction plans and specification must always be contingent upon the final review by the appropriate regulatory and funding agencies. The procedures outlined in Chapter 14, Sections 1401.04, 1401.05 and 1401.06 must also be followed in the submission of final plans.

1402 CONTENT OF DOCUMENTS SUBMITTED FOR APPROVAL

1402.01 Schematic Design Phase

Once the initial educational specification is complete, the architect shall develop schematic design drawings that translate the educational and physical needs of the facility into a graphic illustration. The schematic design phase submission must include:

- A. Initial educational specification
- B. Schematic floor plans and exterior building elevation drawings sufficient to describe the general layout and character of the building design
- C. Preliminary building square footage by space, by floor and total building area
- D. A breakdown of academic square footage, administrative square footage, support services square footage and building circulation square footage
- E. Preliminary estimate of probable square footage construction cost

1402.02 Design development plans, final educational specifications, and building outline specifications should include the following items.

- A. Plot plan which includes size and shape of site, orientation, general topography, location of existing and new buildings, streets and highways, means of sewage disposal, and tentative development of the site.
- B. Floor plans showing existing and new buildings (minimum scale of 1/16 inch), type of wall, floor, partition, roof and stair construction, size and purpose of rooms, stairs, corridors, doors, windows, plumbing fixtures and built-in equipment, and probable future additions.
- C. Elevations, at least one side of the building, overall dimensions, finished floor and ceiling levels, finished outside grade level, windows, doors, steps, areas, retaining walls and materials
- D. Sections explaining any conditions not made clear on other drawings
- E. Proposed service connections, including gas, water, electricity and sewer, name of public service district or provider, and location of wells and sewage disposal system, if any
- F. Outline specifications to augment information shown on drawings
- G. Description of how the current facility does not meet the following goals, and how the proposed project will meet them
    - A. Student health and safety needs
    - B. Economies of scale, including compatibility with similar schools that have achieved the most

economical organization, facility utilization, and pupil-teacher ratios

C. Reasonable travel time and practical means of addressing other demographic considerations

D. Multi-county and regional planning to achieve the most effective and efficient instructional delivery system

E. Curricular improvement and diversification, ie., computerization and technology, and advanced senior courses in science, math, language arts, and social studies

F. Innovations in education, ie., community-based programs and year-round schools

G. Adequate space for projected enrollment

1402.03 Final Plans and Specifications

These shall include the following:

A. Site or plot plan - size and shape of site, adjoining streets, highways and walks, position of existing and new buildings on the site, location and connections of all service lines, finish contours with finish grades at building and elevation of first floor rooms, location of wells and sewage disposal system, if any, general landscaping and location of walks, driveways, parking areas and exterior steps

B. Floor plans showing existing and new buildings (each floor and roof at not less than 1/8 inch scale), footings and foundations, dimensions and schedules showing type and size of each door and window, complete figures so that size and thickness of walls and partitions can be readily determined, level of finished floors, furred walls and ceilings, door swings, location of built-in equipment, floor construction, run, dimensions and spacing of joists and girders, notation of safe live loads, and materials.

C. Elevations for all sides (same scale as architectural plans)

D. Sections (same scale, or larger, as that of floor plans), to show clearly special conditions, typical stairs, instructional spaces and corridors, equipment and fixtures, floor construction, levels and thickness, wall and ceiling construction, typical windows, interior and exterior doors, finish material, roof construction, fire barriers, and smoke pollution

E. Details (larger scale) showing typical exterior wall sections, footings, foundations, floors, windows, cornice and roof, all vertical dimensions, each type and size of door with glazing and paneling, frame and trim, each type of window, together with distances to floor and ceiling, stairs, including risers, treads, handrails, newels and landing lines, chalkboard, bulletin board, trim, chalk troughs, built-in equipment, counters, cupboards and drawers, and wardrobes, unless of standard manufacture

F. Plumbing plans, including foundation drain lines, storm and sanitary sewer lines, complete water supply system and location of all plumbing fixtures, including hose cabinets and sewage disposal system

G. Heating and ventilating plans showing size and type of heat unit, with all connections, pumps, all supply and return lines with sizes, valves and slopes, motors and fans, including types, periphery speed, capacity and air velocity in ducts, and locations, sizes and capacity of all ducts, grilles and ventilators

H. Electrical plans using standard symbols to show all connections, inside and outside, location of wall, floor and ceiling outlets or receptacles, location and size of all conduits, capacity of outlets, location and details of switch panels, circuit breakers and fusing, location and connections for all bells, alarms, clocks and special outlets, and types and designs of lighting fixtures

I. Structural plans showing all concrete and steel columns, beams, trusses, girders, joists, slabs and reinforcing, fireproofing of structural members, details, diagrams and schedules as required for a complete understanding of plans

J. Complete specifications augmenting the information shown on the drawing, giving details on construction materials and methods, mechanical equipment and installations and tests. In general, specify all window shades, toilet room accessories and lockers and all other permanent equipment forming an integral part of the building.

1402.04 Application for Approval of Preliminary and Final Plans and Specifications - Form P-1

1402.05 Exceptions Process

Local educational agencies may appeal any recommendation the joint interagency review committee or its professional staff makes. A final appeal of any committee decision to the State Board of

Education is available to the local agency, which must notify by letter to the coordinator stating its intention.

NOTE: Fire Code appeals must be made to the State Fire Commission.

1403 ARCHITECTURAL AREA AND VOLUME OF FACILITIES

1403.01 The "Application for Approval" (Form P-1) requires data on proposed buildings. The information is necessary for the Department to make space and cost comparisons and disseminate construction data to agencies and interested persons. If area and cubage data are to be valid in comparisons, the same method of computation must be used.

1403.02 Architectural Area of Buildings

A. The architectural area of a building is the sum of the areas of all floors of the building, including: basement, mezzanine, intermediate floored tiers and penthouse of headroom heights, measured from the faces of exterior walls or from the center line of walls separating buildings.

B. Covered walkways, open roofed-over areas that are paved, porches and similar spaces shall have the architectural area multiplied by an area factor of 0.50.

C. The architectural area does not include such features as pipe trenches, exterior terraces or steps, chimneys or roof overhangs.

1403.03 Architectural Volume of Buildings

The architectural volume (cube or cubage) of a building is the product of the total areas defined above times the height from the under side of the lowest floor construction system to the average height of the surface of the finished roof above.

1403.04 Energy Analysis

An analysis documenting the availability and costs of energy types and comparing various space conditioning systems shall be utilized as a basis for the selection of each. Also, an energy analysis to determine the BTU/Gross S.F./Year shall be submitted. The architect/engineer may submit printouts of recognized computer programs to satisfy this requirement.

1404 STANDARDS FOR ARCHITECTURAL SERVICES

1404.01 The project architect will provide services, plans and specifications which may be executed within the project budget. It becomes the architect's responsibility to redesign a project at no cost to a board of education in order to construct a facility within the budget and to comply with county boards of education and State Department of Education requirements.

1404.02 It shall be the responsibility of the project architect to assure that the project meets the requirements of this policy and to assure the legitimacy of bidders.

1404.03 Basis for Determining Architect's Fees

A. The architect's compensation for the basic services discussed above is usually based on one of the following methods:
    1. Percentage of construction cost of the work
    2. Fixed lump sum fee
    3. Professional fee plus reimbursement of expenses
    4. Multiple of direct personnel expense
    5. Salary, per diem or hourly rate

B. Counties may contact the SBA with questions concerning architectural services

1404.04 The Architect's Agreement
No services should be rendered by the architect without a definite understanding as to the scope of services and the fee basis. This contract is for the protection of both the client and the architect. AIA standard contract or SBA alternative contract is acceptable.

1405 TRADITIONAL TASKS PERFORMED IN SCHOOL BUILDING PROGRAMS

1405.01 Tasks listed are those generally performed during the completion of a satisfactory school building project. The sequence of tasks is not always the same, nor is the time allotment always the same.

1405.02 Care should be exercised by the owner (County Board of Education) when undertaking any project to assure that all activities are in accordance with statutory and regulatory provisions and that the investment is adequately protected at all times.

1405.03 Particular caution is required in Phase V if the board is acting as its own contractor, or if maintenance employees are constructing the building or addition.

TRADITIONAL TASKS

Approximate Time Allotted	Task	Responsibility
PHASE I	Anticipates School Building Needs	O
	Seeks Aid of Education Specialist	O
24 to 30 Weeks	Completes Preliminary Survey Determining Remodeling and Construction Needs	O-S
	Acts to Secure Funding	O
	Seeks Legal Counsel on Procedures to Secure Levy or Bond Monies (when applicable)	O
	Initiates Preparation of Educational Specifications	O
PHASE II	Seeks Architectural Services	O-S
	Seeks Construction Manager Service	O-S
	Arranges Preliminary and Final Screening of Architect & Construction Manager	O-S
	Selects Architect and Construction Manager	O-S
	Negotiates Architect and Construction Manager's Contract	O-A-S-CM
12 to 20 Weeks	Sets Production Time Limits for Building Design and Construction	O-A-S-CM

C - Contractor
O- Owner (Board of Education)
A - Architect
S - SBA Representative (when applicable)
E - Department of Education
CM - Construction Manager (when applicable)

TRADITIONAL TASKS

Approximate Time Allotted	Task	Responsibility
PHASE II (cont'd)	Verifies Availability of Utilities and Seeks Necessary Approvals	O-A-CM
	Reviews Potential Sites	O-A-S
	Selects and Acquires Sites	O
	Surveys Site and Performs Subsoil Investigations	O-A-CM
	Analyzes Educational Specifications and Establishes Building Program	O-A-S-CM
	Prepares Schematic Design Documents	A
	Reviews Schematic Design in Light of Educational Specifications	O-A-S
	Prepares Preliminary Estimate of Probable Construction Costs	A-CM
	Reviews Schematic Designs and Preliminary Cost Estimates	O-S
	Prepares Preliminary Design and Layout of Furniture and Equipment	O-A-S
	Prepares Design Development Documents	A
	Prepares Outline Specifications	A-CM

C - Contractor
O- Owner (Board of Education)
A - Architect
S - SBA Representative (when applicable)
E - Department of Education
CM - Construction Manager (when applicable)

TRADITIONAL TASKS

Approximate Time Allotted	Task	Responsibility
PHASE II (cont'd)	Selects Equipment	O-A
	Updates Preliminary Estimate of Probable Construction Costs	A-CM
	Submits Design/Development Document for Preliminary Approval by State Agencies	O-A-CM
	Confers on Design Development Review Comments	O-A-S-CM
	Revises Design Development Documents (if required)	A
	Approves Design Development Documents	O-S-E
	Authorizes Preparation of Final Plans and Specifications (Bidding & Construction Documents)	O-S
PHASE III	Approves Special Consultant (if required)	O-A-S
	Confers on Project Specifics	O-A-S-E-CM
	Prepares Final Construction Drawings (Consisting of Drawings and Specifications)	A
16 to 24 Weeks	Prepares Final Estimate of Probable Construction Costs	A-CM

C- Contractor
O- Owner (Board of Education)
A- Architect
S- SBA Representative (when applicable)
E - Department of Education
CM- Construction Manager (when applicable)

TRADITIONAL TASKS

Approximate Time Allotted	Task	Responsibility
	Verifies Construction Time Limits	O-S-CM
	Submits Preliminary Application for Project Approval (P-1) and Final Documents for Approval of State Agencies and Owner	O-A
	Confers on Construction Documents	O-A-S-E-CM
	Revises Construction Documents (if required)	A
	Seeks Approval of Contract Documents By Legal Advisor (if required)	O
	Approves Final Construction Documents	O-E-S
PHASE IV	Advertises for Bids	O
	Issues Bid Documents	A
	Conducts Pre-Construction Meetings for Bidders	O-A-S-CM
	Receives Bids	O-A-S-CM
3 to 5 Weeks	Tabulates and Reviews Bids	O-A-S-CM
	Advises on Contract Award	A-S-CM
	Awards Construction Contract	O

C - Contractor
O - Owner (Board of Education)
A - Architect
S - SBA Representative (when applicable)
E - Department of Education
CM - Construction Manager (when applicable)

TRADITIONAL TASKS

Approximate Time Allotted	Task	Responsibility
	Issues Notice to Proceed Letter to Contractor	A
PHASE V	Selects Furniture	O-A-S-CM
	Reviews and Approves Shop Drawings and Submittals	A-CM
40 to 72 Weeks	Makes Adjustments and Corrections of Shop Drawings and Submittals (if required)	O-A-C
	Constructs Building	C-CM
	Conducts Timely Construction Progress Meetings	O-A-S-CM
	Reviews & Observes Construction	O-A-S-CM
	Prepares Field Observation Reports	A-S-CM
	Confers and Accepts or Rejects Construction Deviations	O-A-S-C-CM
	Approves Construction Certificates for Payment	O-A-S-CM
	Pays Construction Costs Monthly	O-S-C

C - Contractor
O - Owner (Board of Education)
A - Architect
S - SBA Representative (when applicable)
E - Department of Education
CM - Construction Manager (when applicable)

TRADITIONAL TASKS

Approximate Time Allotted	Task	Responsibility
	Reviews Construction Reports, Progress and Delays	O-A-S-CM
	Prepares and Signs Change Orders Requests	A-C-CM
	Approves and Countersigns Change Orders	O-S-CM
	Prepares List of Construction Deficiencies (Project Punch list)	O-A-S-CM
	Accepts Building as Substantially Complete	O-A-S-CM
	Receives Special Guarantees and Warranties from Contractors	O-A
	Instructs Building Owners Staff in Use And Operation of Building	C-CM
	Makes Final Inspection	O-A-S-CM
	Assembles Project Close Out Documentation and Submits Close Out Documentation to Owners	A-C-CM
	Arranges Dedication	O-A-S
	Makes Final Payment	O-S

C - Contractor
O - Owner (Board of Education)
A - Architect
S - SBA Representative (when applicable)
E - Department of Education
CM - Construction Manager (when applicable)

TRADITIONAL TASKS

Approximate Time Allotted	Task	Responsibility
	Prepares Application for Final Project Approval (P-1) and Submit to State Agency	O-A
	Prepares Certificate for Project Completion (BP-13-A) and Submit to State Agency	O-A
	Performs Final Walk-through Review of Project and Signs Off On BP-13-A Certificate	O-A-C-E-S-CM
	Accepts Building as Complete	O-S
	Assumes Maintenance	O
PHASE VI	Performs Walk-through Inspection of Project Prior to the Expiration of Guarantees Warranties	O-A-C-CM

C - Contractor
O - Owner (Board of Education)
A - Architect
S - SBA Representative (when applicable)
E - Department of Education
CM - Construction Manager (when applicable)

1406 FINAL INSPECTION

1406.01 When a project is completed, the county must complete a Certification of Project Completion, form BP-13-A (See Appendices) and submit it to the Office of School Transportation and Facilities, and SBA when applicable. If the amounts on the BP-13-A differ from the project budget amount in the CEFP, the plan must be amended in order to reconcile any difference. Following receipt of the BP-13-A, the appropriate agencies will contact the county and schedule a final inspection. A final inspection of completed construction shall also be conducted by the project architect, the contractor and the State Fire Marshal, and the SBA project representative when applicable. For additional project closeout documents for SBA funded projects are found in the SBA Guidelines and Procedures Handbook.

NOTE: A certificate of occupancy must be acquired from the Fire Marshal's Office and the SBA, when applicable, before any completed construction can be occupied.

1406.02 Upon completion of any necessary corrections and subsequent inspection, official final acceptance of the project will be made.

1406.03 For the sake of illustration, the following list contains items which should be examined during the final inspection to assure compliance with final plans and specifications. Examine for proper type, location, installation, finish, cleanliness, mounting heights and operation.

SITE AND DEVELOPMENT

Finish Grading
Landscaping
Drives
Fencing
Seeding
Walks and Ramps
Parking Areas with Curb Cuts
Playground

BUILDING EXTERIOR

Foundation
Window & Door Frames
Railings
Flashing
Drains
Wall Surfaces
Glass & Glazing
Roof Surface
Trim
School Name

BUILDING INTERIOR

Floor Surfaces
Ceiling Surfaces
Doors & Frames
Thresholds
Chalkboards
Wood & Metal Trim
Wall Surfaces
Acoustical Materials
Door Hardware
Window Hardware
Bulletin Boards
All Surface Finishes

PLUMBING, WATER, GAS

Fixtures
Cleanouts
Special Toilets
Shutoffs
Drainage System

ELECTRICAL SERVICE

Switches & Plates
Lighting Fixtures
Clock & Program Systems
Telephone Systems
Runs
Panels
Fire Alarm System
Heating & Ventilating
Equipment
Controls
Emergency Lighting

EQUIPMENT AND FURNISHINGS

Lockers
Refrigeration
Display Cases
Elevators
Extinguishers
Fountains
Kitchen Equipment

1407 ON-SITE INSPECTION OF FACILITIES FUNDED BY THE SCHOOL BUILDING AUTHORITY OF WEST VIRGINIA OR THE WEST VIRGINIA BOARD OF EDUCATION

1407.01 Annual on-site inspections of school facilities funded totally or partially with funds from the School Building Authority of West Virginia or the West Virginia Board of Education shall be conducted.

1407.02 These inspections shall be conducted at all School Building Authority "Needs" and "Emergency" funded projects or West Virginia Board of Education funded projects resulting in new building construction and/or additions of $1,000,000 or greater.

1407.03 The on-site inspections shall be conducted by members of the Governor's Committee on School Facilities Evaluation and appropriate personnel of the West Virginia Department of Education.

1407.04 The on-site inspection shall be separate and in addition to school accreditation on-site reviews that may be performed by the West Virginia Department of Education as required by West Virginia Code 18-2E-5.

1407.05 The instrument used for the purpose of an on-site evaluation shall be the School Facilities Appraisal form developed and field tested by the Governor's Committee on School Facilities Evaluation. (See Appendices)

1407.06 A comprehensive report of the inspection shall be submitted to either the School Building Authority of West Virginia or the West Virginia Board of Education, depending on funding source, within thirty (30) days of the inspection date by the Office of School Transportation and Facilities.

1407.07 Copies of each comprehensive report shall be forwarded to the Office of the Governor, the West Virginia Board of Education, and the county superintendent and principal of the evaluated school.

1407.08 An action plan addressing intended corrections and appropriate time lines for compliance, regarding all items identified during the evaluation as "Improvement Needed", shall be submitted to the School Building Authority and/or the West Virginia Board of Education by the county superintendent within forty-five (45) days of receipt of the comprehensive report.

1407.09 The School Building Authority or the West Virginia Board of Education, depending on funding source, shall determine by inspection if the corrective action plan has been implemented within the appropriate time period. In the instance of noncompliance, the West Virginia Board of Education shall restrict the use of necessary funds or otherwise allocate funds from moneys appropriated by the West Virginia Legislature for those purposes set forth in West Virginia Code 18-9A-9.

Chapter 15

1500 STANDARDS FOR EXISTING FACILITIES

The following standards are required for all existing facilities in operation during the 1985-86 school year and thereafter.

1500.01 Buildings, grounds, furnishings and equipment are clean and free from debris.

1500.02 Buildings, grounds, furnishings and equipment are free from observable safety hazards.

1500.03 The county board of education has reviewed the most recent reports or state regulatory agencies and has a plan for corrective action.

1500.04 The county board of education has a policy on the efficient use of energy.

1500.05 All toilet facilities must contain hot and cold water mixing faucets in workable condition and individual stalls with doors on all toilets. Soap, paper towels and toilet tissue must be available to students at all times. All toilet entrance doors must be self closing.

1500.06 All custodians' closets must contain service sinks with hot and cold water.

1500.07 All schools must be attractively painted and illuminated in a manner which most effectively contributes to an environment of visual accuracy and comfort.

1500.08 The county board of education has a policy providing for the eradication and/or containment of asbestos in public school facilities and has on file in each school facility an approved asbestos management plan for that school.

1500.09 The heating, ventilating and air-conditioning systems in all school facilities are maintained in a manner that provides maximum comfort and economy.

1500.10 Adequate drinking fountains in workable condition are available to the school population.

1500.11 The exterior of the building, including windows, doors and roof, is free of air and water infiltration.

1500.12 The county has on file with the state Department of Education an approved current comprehensive educational facilities plan.

1500.13 The county's comprehensive educational facilities plan is properly amended before any renovation, addition or new construction is started. The county's comprehensive major improvement plan (MIP) is on file and properly amended.

1500.14 Renovations, additions and new construction are completed in accordance with the most current edition of "Handbook on Planning School Facilities" and the SBA Guidelines and Procedures Handbook, when applicable.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GENERAL GUIDELINES FOR CONSTRUCTING SCHOOL ACCESS ROADS ON STATE HIGHWAY RIGHTS OF WAY

1. LEGAL PROVISIONS

The Division of Highways has the responsibility, by law, to maintain the rights of way of State highways, to preserve the operational safety, integrity, and function of the highway facility including supervision over the construction and reconstruction of State highways.

Before beginning any construction, a permit or an agreement is to be secured from the Division of Highways authorizing construction on the State right of way. After issuance of a work permit or an agreement, revisions or additions to the work within the State right of way shall not be made without approval from the Division of Highways.

Failure to secure a permit or an agreement prior to construction, shall result in denial of access and/or removal of the approach.

2. ENTRANCE PERMITS

Any applicant desiring to construct or reconstruct an access connecting with any State highway or work upon State highway right of way shall make application for a permit. The permit application is to be submitted to the District Engineer in charge of the applicable county. Application forms may be obtained from the District office.

3. AGREEMENTS

Any plan to reconstruct a State highway, such as horizontal/vertical realignment or widen for turning lanes, that will require transfer of property ownership or abandonment of a section of State highway, will require a legal agreement with the Division of Highways. The agreement will be written by the Division of Highways.

4. COORDINATION

a. Only plans proposing to add/modify an intersection or work upon the State highway right of way are to be submitted to the Division of Highways for review. The submission is to include the site plan and applicable details.

b. The following steps are to be followed to obtain plan approval:

b-1. Submit preliminary plans and details to the Division of Highways for review and comment.

b-2. The Division of Highways will review and provide comments as necessary.

b-3. Submit final plans and details to the Division of Highways for approval.

b-4. The Division of Highways will provide plan approval, subject to resolution of prior comments.

b-5. The applicant will apply for an access permit or request the Division of Highways to prepare an agreement, as applicable.

b-6. Permit/Agreement will be processed by the Division of Highways.

NOTE: All submissions are to include two (2) sets of plans submitted to:

Mr. James E. Sothen, P.E.
Acting Director, Engineering Division
West Virginia Department of Transportation
Division of Highways
Building 5, Room A-430
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305-0430

5. PLANS – CRITERIA

a. Intersection Design – The intersection design (angle, turning radii, etc.) is to be in accordance with A Policy on Geometric Design of Highways and Streets (AASHTO), dated 1990.

b. Stopping Sight Distance – The intersection is to be located so that the stopping sight distance meets or exceeds the minimum distance given in AASHTO for the posted speed of the State highway.

c. Drainage – Drainage design is to be in accordance with the Division of Highways Drainage Manual, dated 1984.

d. Roadway Widening for Turning Lanes – Turning lane design is to be in accordance with AASHTO.

e. Inlets, Wingwalls, and Guardrail – Drainage and guardrail details are to be in accordance with the Division of Highways, Standard Details Book, Volume 1, dated March 1, 1993.

f. Construction Materials – Construction materials are to meet the Division of Highways Standard Specifications, Roads and Bridges.

g. Traffic Control – Traffic is to be maintained on the highway through the work area in accordance with the Division of Highways manual, Traffic Control for Street and Highway Construction and Maintenance Operations, dated November 1994.

6. PLANS – CONTENT

All plans for access construction are to include, as a minimum, the following:

a. Adequate horizontal and vertical alignment of the State highway to determine stopping sight distance at the proposed intersection.

b. Existing and proposed drainage.

c. Drainage calculations for culverts and ditches.

d. Existing highway right of way limits.

e. Utilities (above and underground).

f. Centerline geometrics

g. The State highway route number.

h. Location map.

i. Buildings, driveways, trees, or any other pertinent information that could conflict with the safety of the intersection.

j. Access road typical cross section showing the lane and shoulder widths, cross slope, and pavement material thicknesses.

k. Cross sections at a maximum of 50' intervals showing the cuts and fills.

l. Turning radii to accommodate a bus vehicle.

NOTE: Only the site grading, drainage, and paving plans need to be submitted to the Division of Highways (do not include architectural plans).

WEST VIRGINIA DEPARTMENT OF TRANSPORATION
DIVISION OF HIGHWAYS
DISTRICT ENGINEERS

Mr. John Dawson
District 1 Engineer (Acting)
Division of Highways
1334 Smith Street
Charleston, WV 25301-1492
Telephone: 304-558-3001
Fax: 304-558-6391

Mr. Wilson Braley
District 2 Engineer
Division of Highways
PO Box 880, 801 Madison Avenue
Huntington, WV 25712-0880
Telephone: 304-528-5625
Fax: 304-528-5613

Mr. Robert Epler
District 3 Engineer
Division of Highways
PO Box 308, 720 Depot Street
Parkersburg, WV 26102-0308
Telephone: 304-420-4645
Fax: 304-420-4683

Mr. Richard B. Davis
District 4 Engineer (Acting)
Division of Highways
PO Box 4220
Clarksburg, WV 26302-4220
Telephone: 304-842-1500
Fax: 304-842-1564

Mr. William Hartman
District 5 Engineer
Division of Highways
PO Box 99 (Rte 50)
Burlington, WV 26710-0099
Telephone: 304-289-3521
Fax: 304-289-5085

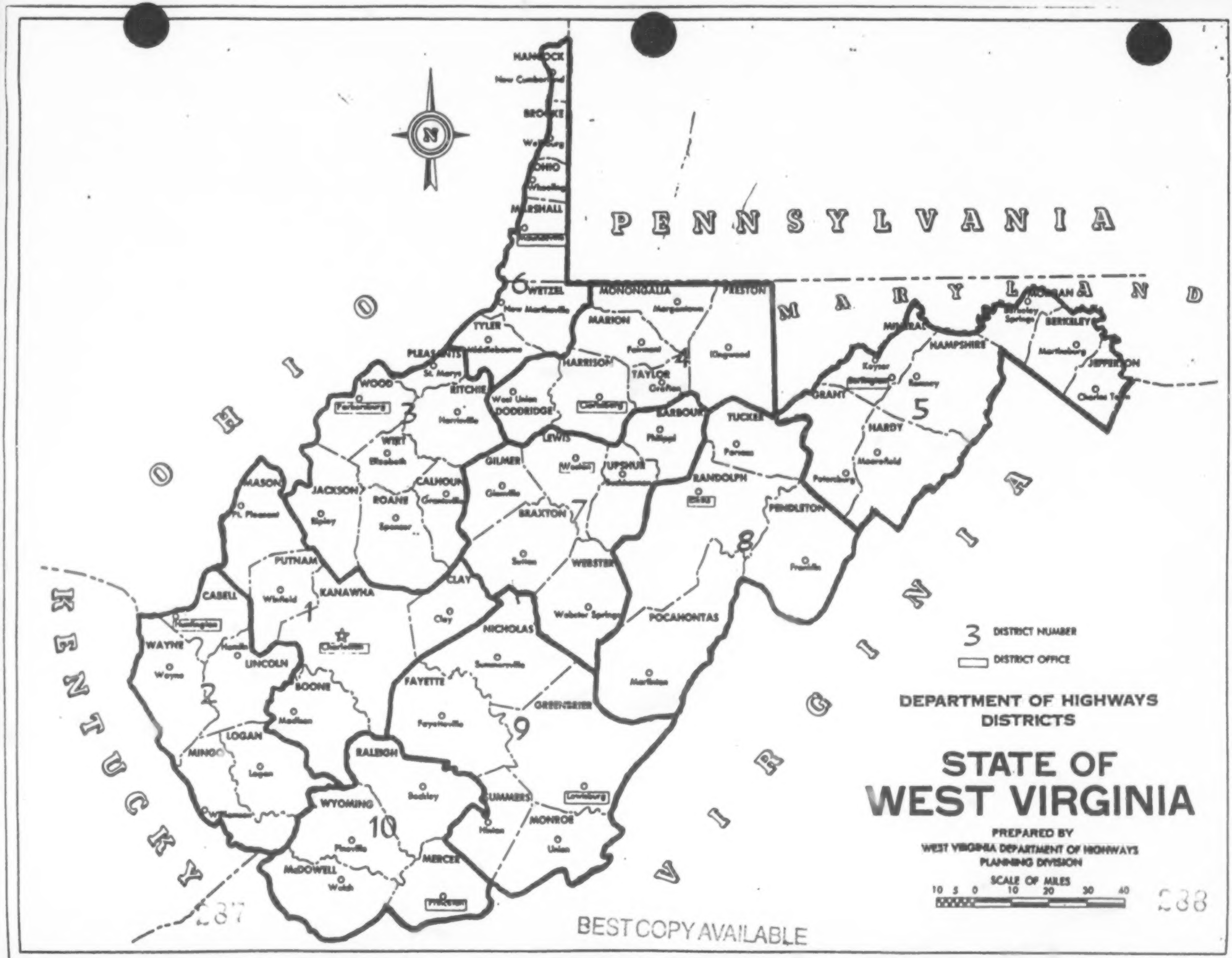
Mr. Daniel Sikora
District 6 Engineer
Division of Highways
904 Third Street
Moundsville, WV 26041-1605
Telephone: 304-843-4008
Fax: 304-843-4014

Mr. Marvin Murphy
District 7 Engineer
Division of Highways
Drawer 1228 (Depot Street)
Weston, WV 26452-1228
Telephone: 304-269-0414
Fax: 304-269-0420

Mr. Tom Staud
District 8 Engineer
Division of Highways
PO Box 1516 (US 219 North)
Elkins, WV 26241-1516
Telephone: 304-637-0220
Fax: 304-637-0218

Mr. Robert C. Ware
District 9 Engineer
Division of Highways
210 Maple Street
Ronceverte, WV 24970-1547
Telephone: 304-647-7450
Fax: 304-647-7452

Mr. Richard Boyd
District 10 Engineer (Acting)
Division of Highways
120 Scott Street
Princeton, WV 24740-2737
Telephone: 304-487-5228
x: 304-487-5254


N
PENNSYLVANIA
MARYLAND
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HANCOCK
New Cumberland
BROOKE
Wellsburg
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Wheeling
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New Martinsville
TYLER
Middlebourne
PLEASANTS
St. Marys
WOOD
Parkersburg
3
RITCHIE
Harrisville
WIRT
Elizabeth
JACKSON
Ripley
ROANE
Spencer
CALHOUN
Grantsville
MASON
Pt. Pleasant
PUTNAM
Winfield
CABELL
Huntington
KANAWHA
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Charleston
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Wayne
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LINCOLN
Hamlin
BOONE
Madison
LOGAN
Logan
MINGO
Williamson
WYOMING
Pineville
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McDOWELL
Welch
MERCER
Princeton
RALEIGH
Beckley
SUMMERS
Hinton
MONROE
Union
GREENBRIER
Lewisburg
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FAYETTE
Fayetteville
NICHOLAS
Summersville
CLAY
Clay
BRAXTON
Sutton
7
GILMER
Glenville
LEWIS
Weston
UPSHUR
Buckhannon
WEBSTER
Webster Springs
DODDRIDGE
West Union
HARRISON
Clarksburg
MONONGALIA
Morgantown
MARION
Fairmont
4
TAYLOR
Grafton
PRESTON
Kingwood
BARBOUR
Philippi
TUCKER
Parsons
RANDOLPH
Elkins
8
POCAHONTAS
Marlinton
PENDLETON
Franklin
GRANT
Petersburg
MINERAL
Keyser
Burlington
HAMPSHIRE
Romney
5
HARDY
Moorefield
MORGAN
Berkeley Springs
BERKELEY
Martinsburg
JEFFERSON
Charles Town
3 DISTRICT NUMBER
DISTRICT OFFICE
SCALE OF MILES
10 5 0 10 20 30 40

DEPARTMENT OF HIGHWAYS DISTRICTS

STATE OF WEST VIRGINIA

PREPARED BY
WEST VIRGINIA DEPARTMENT OF HIGHWAYS
PLANNING DIVISION

287

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Sample Time Line Projections (100.016)

Johnson County Schools
Facility Planning Time Line Projections

Dates indicate years projects are to start.

1990	Addition	Smithson Elementary School
	Renovation	Walters Elementary School
1991	Roof Replacement	Clark Jr. High School
1992	New Construction	East Johnson High School
1993		
1994	Restroom & Kitchen Modernization	Edison Elementary School
	Multi-purpose Room	Washington Elementary School
1995		
1996	Consolidation/ Addition	Roane Elementary closed - James Elementary Addition
	Consolidation	Close Ellison and Spangler Elementary Schools - Move to Smithson Elementary School
1997		
1998	Addition	West Johnson High School
1999	Renovation/ Addition	William Bryant Junior High School

SCHOOL BUILDING AUTHORITY OF WEST VIRGINIA
AND
WEST VIRGINIA DEPARTMENT OF EDUCATION
FACILITY CLASSIFICATION FORM

COUNTY: ____________________ DATE: ________________

FACILITY NUMBER	FACILITY NAME	CURRENT ENROLLMENT	CURRENT GRADE CONFIGURATION	CLASSIFICATION	DESCRIBE FUTURE USE TRANSITIONAL FACILITIES

SCHOOL CLASSIFICATION CATEGORIES

P = Permanent:	A school facility that is to be utilized throughout the 10 year planning period without a change in its present use or grade configuration.
T = Transitional:	A school facility that is projected to be utilized throughout the 10 year period but will experience a change in its grade configuration or use.
F = Functional:	A school facility that is projected for closure between the 5th and 10th year during the 10 year planning period.
C = Closure:	A school facility that is projected for closure before the 5th year of the 10 year planning period.

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WEST VIRGINIA DEPARTMENT OF EDUCATION
AND
SCHOOL BUILDING AUTHORITY OF WEST VIRGINIA
APPLICATION FOR PROJECT APPROVAL

West Virginia Department of Education
1900 Kanawha Boulevard East, Bldg. #6 Room B-264
Charleston, West Virginia 25305

School Building Authority of West Vi[illegible]a
2300 Kanawha Boulevard, East
Charleston, West Virginia 25311

COUNTY ______________________

SCHOOL NAME ______________________

LOCATION ______________________

ESTIMATED STARTING DATE ____________

ESTIMATED COMPLETION DATE ____________

GRADES HOUSED ________ ENROLLMENT ______

PROJECT DESCRIPTION ____

SITE ACRES __________ USEABLE ACRES __________

GROSS BUILDING AREA NEW CONSTRUCTION __________

ENERGY EFFICIENCY (BTU/Sq.Ft./Yr) __________

SQ. FT. AFFECTED BY THIS PROJECT __________

WATER SOURCE ______________________

SEWAGE DISPOSAL TYPE ______________________

LINE ITEM	PRELIMINARY ESTIMATE	FINAL COST	FINAL UNIT COST (Per Sq. Ft.)
GENERAL REQUIREMENTS (A/E, Legal, Etc.)			
SITE ACQUISITION			
SITE WORK (Geotech, Grading, Paving, Etc.)			
CONCRETE (Ftg./Foundations, Slabs, Etc.)			
MASONRY			
METALS (Str. Stl., Jt., Deck)			
CARPENTRY			
THERMAL & MOISTURE PROTECTION			
DOORS AND WINDOWS			
FINISHES (Floors, Walls, Ceilings, Painting)			
SPECIALTIES (Chalkbd, Tbd., Locker, Toil Acc.)			
EQUIPMENT (Food Service, Etc.)			
FURNISHINGS (Seating, Casework, Etc.)			
SPECIAL CONSTRUCTION			
CONVEYING SYSTEMS (Elevators, Etc.)			
MECHANICAL (HVAC, Plumbing, Etc.)			
ELECTRICAL			
OTHERS (Describe)			
GRAND TOTALS			
FUNDING			
COUNTY SOURCE			
SBA NET NEED			
FEDERAL SOURCE			
GRAND TOTALS			

AGENCIES APPROVALS	RECEIVED	APPROVED	RECEIVED	APPROVED	RECEIVED	APPROVED
STATE DEPARTMENT OF HIGHWAYS						
STATE DEPARTMENT OF HEALTH						
STATE FIRE MARSHAL						
SCHOOL BUILDING AUTHORITY						
STATE BOARD OF EDUCATION						

____
Signature of Architect or Engineer

____
Signature of County Superintendent

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Rev. 12/11/91
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SCHOOL BUILDING AUTHORITY OF WEST VIRGINIA

EDUCATIONAL SPECIFICATIONS

By constructing educational specifications, the learning activities, the number, groupings and nature of the people involved, the spatial relationships between sections of the facility, the interrelationships of instructional programs with each other as well as noninstructional spaces and the major furniture/equipment needs for the new facility can be defined and more easily understood. Each Ed Spec Committee must consist of representatives from the educational profession, individuals from the community and the architectural design staff selected by the board of education.

When specifications are agreed upon and committed to a written document, the architect is provided the greatest opportunity to design a school that more nearly meets the needs of the educational program and facilitates the activities that will be occurring in the spaces. To that end, and to more readily value the scope of the project, it is essential that an educational specifications document accompany the schematic drawings submitted to the SBA for review prior to approval by the local board of education.*

To be consistent and assist in understanding the issues to be included in the educational specifications, the following outline is provided but should not be considered all inclusive should other issues be of concern to you and your planning committees.

I. Introduction
A short synopsis describing the configuration of the educational structure, the projected number of students, site location, availability of site utilities, existing availability of ancillary facilities and spaces (ie. athletic etc.) and proposed statistics for the new construction.

II. The Community
A brief description of the community, its history, specific cultural distinctions and maps showing geographic characteristics, attendance areas (present and proposed) and the site location.

III. The Educational Plan
The educational plan can be subdivided into two general areas:

A. Curriculum Plan - States the schools philosophy, educational goals and objectives of the program. This should clarify important issues and priorities for consideration in the planning of the new facility.

B. Support Plan - Provides staffing information including teachers, instructional aides, food service personnel, counselors, custodial staff, and administrative staff including principals, assistant principals, department heads etc.

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IV. Building Space Requirements

The utilization of space is extremely important. The SBA requires a minimum 85% utilization of newly constructed schools or schools where building additions are being proposed. In order to assist in developing Section IV, worksheet #1, which compiles data from the calculation of spaces for the new facility, must be completed and incorporated into Section IV.

The final number of allowable classrooms and the square footage for any facility that incorporates SBA funds will be determined by the SBA staff upon consideration of the program needs, building utilization rates, maximization of multi-use spaces in the design and the potential construction of the project within the allocated funds available.

In order to assure appropriate spaces and utilizations for the projected enrollment, room numbers and labels should be assigned to instructional areas on the schematic drawings and a model student schedule developed using Worksheet #2 to locate students and staff within the facility during each of the instructional periods of the day.

The following formula is to be utilized to determine the maximum number of classrooms that may be considered in each curricular area:

FORMULA FOR DETERMINING TEACHING STATIONS PER SUBJECT AREA**

$$\frac{\text{Number of students enrolled in subject} \times \text{Number of periods per week in subject}}{\text{Maximum class size (see reference sheet)} \times \text{Maximum number of periods per week (every period, every day)}} = \text{Number of teaching stations for this subject area}$$

V. Space Allocations

This section describes the instructional areas (general classrooms, PE areas, tech. ed. labs, science areas, consumer and homemaking areas, special education spaces, administrative offices etc.). Middle/Junior and High School departmentalization, specialization of spaces, electives and scheduling are factors to be considered in determining the number of teaching stations. The maximum number of teaching stations may be determined by applying the formula provide in Section IV to each subject area. The following description of each subject area is needed and should include:

A. Goals - What are the objectives to be accomplished in the area.

B. Space Required - Submit the calculations from the formula in Section IV to identify the number of spaces needed in this subject area and complete worksheet #1 attached. Teacher planning areas must be provided in building design allowing maximum use of teaching stations.

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C. Planned Activities - Include specific actions to be performed in an area such as paint, read, science experiments, audio visual presentations, telecommunications, robotics lab, multiple use areas, etc.

D. Number of Users - Determine the number of administrators, teachers, aides and pupils to use the area at any one time.

E. Group Usages - Identify if the area is to be used for large or small group instruction, individual student work, team teaching, multiple usage, etc.

F. Spatial Requirements - Identify the spatial relationships of any one space to other areas of the facility whether inside or outside - near to or away from, convenient to media center (as with language arts areas), capability for combining or subdividing areas, the frequency of such adjustments and the square footage needed to do so, etc. Bubble diagrams should be used to show interrelationships of spaces.

G. Support Facilities - Spaces that allow the area to meet its goals: shared storage areas, teacher preparation areas, student work/storage areas, conference rooms, etc.

H. Environmental Considerations - Acoustical, Visual, Thermal, Climatic and Aesthetic considerations that enhance the practical usage of the specific space.

I. Utility Needs - Utilities needed in the specific area including: water, electrical, toilets, 3-phase power, gas, vacuum capability, telephone, technology wiring, etc.

J. Storage - More specific direction as to the cubic feet of storage needed in the specific area. Generally, this denotes built-in storage areas & closets.

K. Display Areas - Chalkboards, bulletin boards, display cases (linear feet).

L. Furniture and Equipment - quantities and types of items to be used in each area.

M. Technology - Specific needs of each space to accommodate the technological delivery system/network incorporated into the facility.

N. Other - Identify any other specific information essential to each specific area.

VI. Technology Plan

A technical plan for delivery of media, voice, data, graphics, text and telecommunications throughout the school includes a description of the instructional and administrative objectives, the technical structure needed to facilitate the system, the equipment needed to implement the system and the physical/design requirements for incorporating the system into the construction of the facility. The technology plan will be developed according to the Department of Education's Office of Technology & Information Systems' guidelines and submitted to them and the SBA for approval with design development documents.

VII. Design Criteria and General Architectural Considerations

This section should regard the total school complex but may be specified in distinct areas or regard special concerns. Following are some suggested considerations:

A. Health and safety
B. Quality of building systems and components
C. Economies to be attained - instructional, operational, maintenance
D. Flexibility and multi-use of spaces
E. Efficient circulation patterns
F. Community use considerations
G. Communication systems - may be incorporated into the Technology Plan
H. Accessibility
I. Building security
J. Student supervision

VIII. Educational Specifications Committee Page

A signature page for members comprising the ed spec committee will be included. Names will be organized by the group each individual represents, ie., Teachers, Administrators, Parents, Community Leaders, Design Professionals, etc0.

***Architects** - Please be advised that an SBA review will not occur without submittal of educational specifications with schematic drawings. Continued development of the building design beyond schematics without written approval of the SBA is at the fiscal risk of the designer and the board of education. This constitutes a change in the SBA handbook procedures which asks for Ed Specs to be submitted with the design development documents.

**Bibliography:

A. Conrad, MJ., *A Manual for Determining the Operating Capacity of Secondary Schools.* Bureau of Educational Research and Service, OSU.
B. Castaldi, Basil, *The Castaldi Nomogram.* The New England School Development Council.
C. CEFPI, Phoenix, AZ, *A Guide for Planning Educaitonal Facilities*

WORKSHEET #1

SUMMARY OF SPACES FROM CALCULATIONS IN SECTION IV

CURRICULAR AREA	NO. OF CLASSROOMS (According to formula)*	# STUDENTS	SBA USE
SUBTOTAL/TOTAL			

* Classroom numbers from the formula are not to be rounded to the nearest whole number, insert the actual answer from the formula. Example: Language Arts -- 3.4 classrooms

Eedspec/cw/6-95

SBA SUBJECT AREA SPACE ALLOCATION DATA

WORKSHEET #2

Project Name____________________________ Prepared by____________________

Date___________ Design Enrollment____________________ Periods Per Day_____

Rm #	Teacher	Course	Number of Students Per Period								
			1	2	3	4	5	6	7	8	
SUBTOTALS / TOTALS											

Sched.wks/cw/6-95
SBA 141

SCHOOL BUILDING AUTHORITY OF WEST VIRGINIA
Maximum Class Sizes

Classroom Type	EL	MS	HS
Kindergarten & Transitional Kindergarten	20		
General Instruction Areas	25	25	25
Corrective or Remedial Education	15	15	15
Art Rooms (Optional/Elem)	25	25	25
Driver Education Facilities			25
Consumer/Homemaking Classroom (Optional)		25	25
Consumer/Homemaking Lab		25	25
Foreign Language Facilities		25	25
Foreign Language Lab (Optional)		25	25
Technology Education		20	
Music Facilities (Optional Elementary)	25	25	40
Ensemble Room (Optional)			12
Physical Education	25	70	70
Science Facilities		25	20
Micro-Computer Lab	25	20	20
ElectronicTechnology Lab (Optional)		75	
Auditorium (33% of total student body)			
Behavior Disorders	8	8	8
Communication Disorders (Self Contained)	12	12	12
Deaf/Blind (Self Contained)	3	3	3
Mildly Mentally Impaired (Self Contained)	12	12	12
Moderately Mentally Impaired (Self Contained)	12	12	12
Orthopedically Impaired (Self Contained)	10	10	10
Severely/Profoundly Mentally Imparied (Self Contained)	9	9	9
Hearing Impaired Education (Self Contained)10	10	10	10
Visually Impaired Education (Self Contained)	10	10	10
Specific Learning Disabilities (Self Contained)	12	12	12

SCHOOL BUILDING AUTHORITY OF WEST VIRGINIA
Maximum Class Sizes

Classroom Type	EL	MS	HS
Pre-School Handicapped (Self Contained)	10		
Gifted Education (Self Contained)	15	15	15
Resource Services (Regular Program Support)	15	15	15
Agricultural Education			20
Agricultural Mechanics Lab			20
Marketing Education			25
Diversified Cooperative Training			25
Vocational Health Occupations			25
Health Occupations Lab			25
Consumer and Homemaking (Occupational)			25
Food Management, Production & Servuces (Occ)			2[illegible]
Care & Guidance of Children			20
Fashion Management			20
Institutional & Home Mangement (Occ)			20
Vocational-Industrial and Technical Classrooms			20
Industrial and Technical Lab			20
Business Education Classroom			20
Computer/Keyboarding Lab			30
Office Technology			20
Tech Ed. Production Lab			20
Tech Ed. Systems Lab			20

WEST VIRGINIA DEPARTMENT OF EDUCATION
AND
SCHOOL BUILDING AUTHORITY OF WEST VIRGINIA

CERTIFICATE OF PROJECT COMPLETION

Upon completion of a facilities project, submit duplicate copies to the State Department of Education and the School Building Authority to initiate close-out procedures.

County ________
Project/School Name ________
Project Number ________
Enrollment ________
# Teaching Stations ________

Substantial Completion Date ________
Final Inspection Date ________
Fire Marshal - Date of Occupancy Permit (If Required) ________

SOURCES OF FUNDS:

State Funds
  SBA "MIP" $________
  SBA "Needs" $________
Local Funds (Bond) $________
Local Funds (Other) $________
Vocational (State) $________
Vocational (Fed) $________
Federal (Other) $________
Other Funds (List) $________
____
____
____
TOTAL FUNDS $________

SUMMARY OF PROJECT DATA:

Sq. Ft. in Building ________
Site Acquisition $________
Site Preparation $________
Building Construction Costs - Total $________
* Renovation Costs $________
Building Construction Costs-Per Sq. Ft. $________
Building Renovation Costs-Per Sq. Ft. $________
Moveable Equip. Cost $________
A & E Fees $________
** Miscellaneous Costs $________
TOTAL PROJECT COSTS $________

*A project may include both new construction/addition and renovation costs.
**Geotech, Site Survey, Deed Search, Technology Equipment (Explain on Back)

Architect ________ Date ________

Contractor ________ Date ________

Clerk-of-the-Works/Construction Manager ________ Date ________

County Superintendent ________ Date ________

***Inspected this date by a representative of the School Building Authority or the West Virginia Department of Education.

Signature ________ Date ________

***SBA funded projects must have a final inspection by an SBA representative.
WVDE BP-13-A
Rev. 10/94
0075c/80&81a

WEST VIRGINIA SCHOOL BUILDING AUTHORITY
CERTIFICATE OF CONTRACT COMPLETION
FOR MULTIPLE PRIME PROJECT

Upon completion of each prime contractors contract the agency receiving SBA funding shall be responsible for submitting this completed original form to the SBA, with each prime contractors final request for payment.

To the best of our knowledge all required project close-out procedures have been followed and all project close-out documents have been submitted to initiate the release of final payment to this contractor.

ARCHITECTURAL FIRM NAME: ______________________________

PROJECT ARCHITECTOR: ______________________ DATE: __________

PROJECT CONSTRUCTION COST:

LOCAL ______________________________

SBA ______________________________

OTHER ______________________________

PROJECT CONSTRUCTION COST TOTAL: ______________________

PRIME CONTRACT COST TOTAL: ______________________

PRIME CONTRACTOR NAME: ______________________________

PRESIDENT/CEO: ______________________________

SUBSTANTIAL COMPLETION DATE: ______________________________

FINAL COMPLETION DATE: ______________________________

COUNTY/AGENCY: ______________________________

COUNTY/AGENCY PROJECT ADMINISTRATOR: ________________ DATE: ______

PROJECT/SCHOOL NAME: ______________________________

SBA 139
1943b/83&84b
9/28/94

ANNUAL UPDATE

COMPREHENSIVE EDUCATIONAL FACILITIES PLAN

COUNTY UPDATE - Data to be completed and submitted to SBA and SDE by December 1, of each year

1. County-wide Facility Classification Report (SBA/WVDE 116 - Appendix B - SBA Guidelines

2. High School Attendance Area Facilities Chart - for each high school in the county (SBA #132)

3. Feeder School Summary Report -- narrative

4. School Construction Fund "Needs" Project Executive Summary and Review - For the project that the county is submitting for competitive school construction grant funding from the SBA in the next funding cycle (SBA 120 - Appendix H - SBA Guidelines)

5. Prioritized list of all foreseeable projects where SBA "MIP" grants are anticipated as the funding source for their completion

6. Updated CEFP Executive Summary

7. Major Improvement Plan - Executive Summary

The annual update is to be compiled and submitted to the State Department of Education (1 copy) and the School Building Authority (1 copy) in tabbed, three ring binder(s). Tabs should locate the above listed categories.

Revised 5/97
annupd

SCHOOL BUILDING AUTHORITY OF WEST VIRGINIA
PROJECT EXECUTIVE SUMMARY
MAJOR IMPROVEMENT PLAN

PROJECT____

COUNTY____________________ **COUNTY PRIORITY** ________________

PROJECT COST _____________ **DATE**______ **SBA FUNDING CYCLE**_____

PROJECT DESCRIPTION=

FUNDING SOURCE=

TO IMPLEMENT TOTAL MIP	FUNDING FOR THIS PROJECT
SBA $____________ TYPE _____	SBA $____________ TYPE_____
LOCAL ____________ TYPE _____	LOCAL __________ TYPE_____
OTHER ______________________	OTHER ______________________
TOTAL ____________	TOTAL __________

BONDING CAPACITY$__________ AVAILABLE BONDING CAPACITY$_________

EXCESS LEVY CAPACITY$_______ AVAILABLE LEVY CAPACITY $__________

COUNTYWIDE BUDGET INFORMATION

- Are Excess Levy Funds Dedicated Annually to Maintenance? Yes_____ No_____ Amount $______________________________
- Are Excess Levy Funds Dedicated Annually to Building Improvements? Yes_____ No _____ Amount $______________________________ ___
- Percent of Total Building Improvement or Maintenance Budget supported by Levy ________________%. (Based on data provided above)
- Percent of Total County Budget dedicated to Facility Maintenance __________%
- Maintenance Budget this Year $____________________________________

ANNUAL UPDATE

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SCHOOL BUILDING AUTHORITY OF WEST VIRGINIA
AND
WEST VIRGINIA DEPARTMENT OF EDUCATION
FACILITY CLASSIFICATION FORM

COUNTY: ______________________ DATE: ________________

FACILITY NUMBER	FACILITY NAME	CURRENT ENROLLMENT	CURRENT GRADE CONFIGURATION	CLASSIFICATION	DESCRIBE FUTURE USE TRANSITIONAL FACILITIES

SCHOOL CLASSIFICATION CATEGORIES

P = Permanent: A school facility that is to be utilized throughout the 10 year planning period without a change in its present use or grade configuration.

T = Transitional: A school facility that is projected to be utilized throughout the 10 year period but will experience a change in its grade configuration or use.

F = Functional: A school facility that is projected for closure between the 5th and 10th year during the 10 year planning period.

C = Closure: A school facility that is projected for closure before the 5th year of the 10 year planning period.

WVDE 116
8a/35&36a
Rev. 10/94

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INSTRUCTIONS FOR SBA FORM 132

1. One form should be completed for each high school attendance area proposed to be operational in the school year 1999-2000.

2. All facilities that were in operation during the 1990-1991 school year must be shown with a dashed box. 1990-1991 second month enrollments for these facilities must be shown in the brackets. Only facilities that will be in operation during the 2000 school year must be in solid boxes. Year 1999-2000 projected enrollments must be within parenthesis.

3. If the facility is to be built after 1990-1991, list "NEW" in the brackets. If the facility is to be redesignated from its current usage, list "REDSG" in the brackets.

4. **CLOSURES** - list schools that are scheduled for closure before school year 1999-2000, and will not be used by the county board of education for other purposes.

   FACILITY REDESIGNATION - list schools that are scheduled to change their current usage before the school year 1999-2000. Designate what type of facility it will become.

   ELEMENTARY - list only those schools that will still be operational in the year 1999-2000.

   JHS/MIDDLE - list only those schools that will still be operational in the year 1999-2000.

   HIGH SCHOOL - list only the high school for this attendance area for the school year 1999-2000.

SCHOOL BUILDING AUTHORITY OF WEST VIRGINIA
CONSTRUCTION FUND PROJECT "NEEDS" - EXECUTIVE SUMMARY

PROJECT ____

COUNTY ______________________ **PROJECT COST** $______________

FUNDING SOURCE

IMPLEMENTING TOTAL CEFP	**FUNDING SOURCE - THIS PROJECT**
SBA NEED$________ SBA MIP$________	SBA $________
LOCAL $________ TYPE __________	LOCAL$________ TYPE ________
FEDERAL $________	FEDERAL$______________
OTHER $______________________	OTHER$______________________
TOTAL $________	TOTAL$________

Bonding Capacity $_________ Available Bonding Capacity $_________

Excess Levy Capacity $_________ Available Levy Capacity $_________

PROJECT DESCRIPTION

PROJECT STATUS

Site Selected Yes_____ No_____ New Site _____ Geotechnical Yes_____ No_____

Existing Board Owned Property Yes_____ No_____ Survey Performed ___________

Programming/Preliminary Design Completed - Describe:

SCHOOL CLOSURE STATUS

School Closure Required	Yes_____	No_____
County Hearing Done	Yes_____	No_____
County BOE Approved	Yes_____	No_____
WV BOE Approved	Yes_____	No_____

COMPLIANCE WITH SBA REQUIREMENTS - PROPOSED NEW PROJECT

HEALTH AND SAFETY

ECONOMIES OF SCALE

Annual Savings $_________

Cost Avoidance $_________

Proposed facility will_____ will not_____ meet the SBA economies of scale guide.

Students required _________

Students enrolled _________

IF IMPLEMENTED, WHAT IS THE EFFECT OF THIS PROJECT ON PERSONNEL

- Teacher Present No.____ Projected No.____ Difference ____
- Service Personnel Present No.____ Projected No.____ Difference ____
- Administrators Present No.____ Projected No.____ Difference ____

MULTICOUNTY PROJECT

EDUCATIONAL INNOVATIONS AND IMPROVEMENTS

ADEQUATE SPACE FOR PROJECTED STUDENT ENROLLMENT

TRAVEL TIME

LOCAL BOND HISTORY EFFORTS

COMMENTS

#1 DESCRIPTION OF EXISTING FACILITIES

- ________________ School currently houses grades ________
- Constructed on a ____ acre site in 19__ which is adequate____ inadequate____
- ____ major addition(s) in 19__
- Existing ____ story facility contains ____ sq.ft.
- Current enrollment is ________
- 8th Year Projected Enrollment ________
- Building utilization is ________%
- Utilities Public Water____ On-Site Well____ Public Sewage____
  Package Plant____ Other________________
- HVAC Gas____ Electric____ Coal____ Other________________
- Cost to upgrade to current standards is $________________
- Existing facility contains ____ major structural problems
- Health, safety and building accessibility, Comments:____________________

Complete one of the above descriptions for each school affected.
SBA 120
Revised 6/97
exsumneeds

EXECUTIVE SUMMARY
COMPREHENSIVE EDUCATIONAL FACILITIES PLAN

RESA __________ COUNTY ______________________

- Number of existing schools currently within the county (Include vocational, special education, adult education) __________
- Number of schools that will be closed by the year 2000 if the CEFP is implemented __________
- Number of schools that will exist in the county in the year 2000 if the CEFP is implemented __________
- Total estimated cost remaining to implement the entire CEFP $__________
- Total estimated cost of anticipated SBA funded "needs" and "net enrollment" projects in the CEFP $__________
- Total cost for all other projects within the CEFP to be funded from county or other sources excluding SBA funds $__________
- Has regionalization of school facilities been considered within the CEFP? If so, please give a brief description. Yes ______ No ______

____

____

____

- * Approximate annual cost savings as a result of school closures anticipated in the CEFP

  $__________ Annual Cost Savings

  $__________ Avoided Costs

  Include approximate savings such as: annual utilities, annual maintenance, reduced staff; also, include any related costs associated with additional transportation cost, one time cost for moving of student and staff from a closed facility and securing the facilitated school

- Has educational innovation been addressed within the 10 year CEFP? If so, please give a brief description. Yes ______ No ______

____

____

____

* Please indicate annual cost savings per county as indicated. Also, please indicate any cost avoided per county such as anticipated expenditures on schools scheduled to be closed for major renovations that may be required should the facility remain open.

* Please note that the data on the attached Statewide CEFP summary reflects the status you reported in 1990 and will be used for comparative progress toward implementing the CEFP.

______________________ Date

______________________ County Superintendent

0090a/1&2A

- Maintenance Expenditures Last Year Total $____________________
  $/Square foot____________
- Average Maintenance Budget for lowest three of the past five years. $__________

COMPLIANCE WITH SBA REQUIREMENTS
PROPOSED NEW PROJECT

Briefly describe how this project affects the following:

- **HEALTH AND SAFETY**

- **ECONOMIES OF SCALE**

Number of students enrolled in the affected facilities ____________________
____

Economies of scale will_____ will not_____ be achieved or will not be altered_____ as a result of the completion of this project.

ANNUAL SAVINGS $__________ COST AVOIDANCE $__________
(Achieved on this project) (Achieved on this project)

IF IMPLEMENTED WHAT IS THE AFFECT OF THIS PROJECT ON PERSONNEL.

	PRESENT NO.	PROJECTED NO.	DIFFERENCE
• TEACHER	_____	_____	_____
• SERVICE PERSONNEL	_____	_____	_____
• ADMINISTRATORS	_____	_____	_____

- **MULTICOUNTY PROJECT**

- **EDUCATIONAL INNOVATIONS AND IMPROVEMENTS**

- **ADEQUATE SPACE FOR PROJECTED STUDENT ENROLLMENT**

- **TRAVEL TIME**

- **EFFECTIVE AND EFFICIENT USE OF PROPOSED FUNDING**

- **PROVIDING OR IMPROVING A PREVENTIVE MAINTENANCE PLAN**

- **FURTHERANCE OF THE OVERALL GOALS OF THE SBA AND THE COUNTY/AGENCY MAJOR IMPROVEMENT PLAN**

FEEDER SCHOOL SUMMARY REPORT

YOUR COUNTY - UNSER HIGH SCHOOL ATTENDANCE AREA

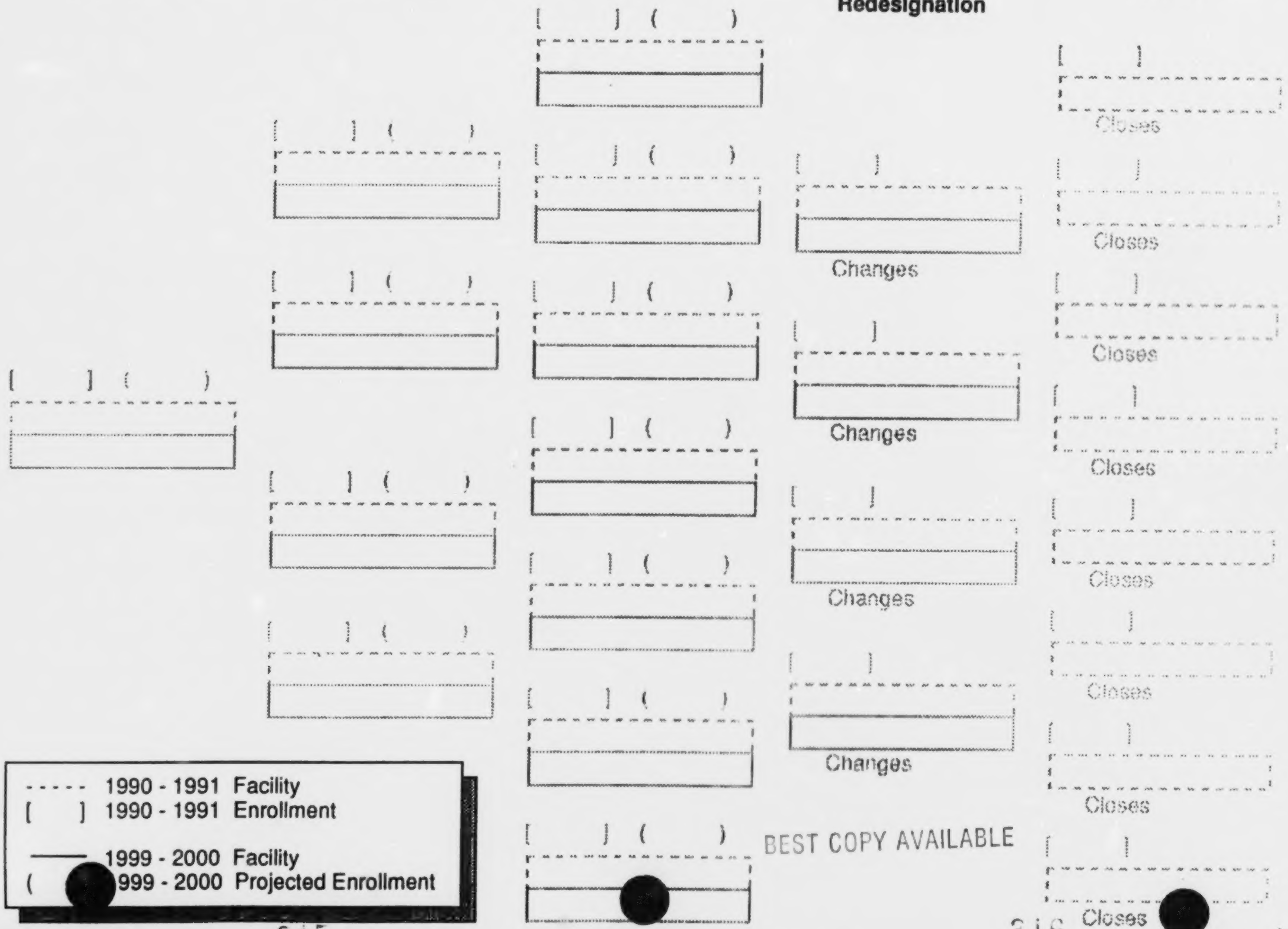
- Unser High School
  - Becomes 9-12 facility; Sept., 1997
  - Goodyear Middle School
    - Feeder to Unser High School
    - Opens as 6-8 Middle School; Sept., 1997
  - Crawford Junior High School
    - Currently feeds Unser High School
    - Closes June, 1997
    - 9th Graders transfer to Unser HS; Sept., 1997
    - 7th and 8th Graders transfer to Goodyear MS; Sept., 1997
    - Brayton Elementary
      - Currently feeds Crawford JHS
      - Changes to K-5 facility; Sept., 1997
      - 6th Graders transfer to Goodyear MS; Sept., 1997
    - St. James Elementary
      - Currently feeds Crawford JHS
      - To become feeder to Goodyear MS; Sept., 1997
      - 6th Graders transfer to Goodyear MS; Sept., 1997
    - Pruett Elementary
      - Currently feeds Crawford JHS
      - To become feeder to Goodyear MS; Sept., 1997
      - 6th Graders transfer to Goodyear MS; Sept., 1997
    - Cheever Elementary
      - Currently Feeds Crawford JHS
      - Students transferred to St. James Elementary; Sept., 1992
      - Becomes Bus Garage; Sept., 1992
    - Tracy Elementary
      - Currently feeds Crawford JHS
      - Students transferred to Brayton EL; Sept., 1997
    - Fox Elementary
      - Currently feeds Crawford JHS
      - 120 students transferred to St. James EL; Sept., 1997
      - 30 students transferred to Brayton EL; Sept., 1997
  - Andretti Middle School
    - Scheduled to become 6-8 Middle School; Sept., 1997
    - Feeder to Unser High School
    - 9th Graders transfer to Unser HS; Sept., 1997
  - Mears Junior High School
    - Currently feeds Unser High School
    - Scheduled to become EL Center; Sept., 1997
    - 9th Graders transfer to Unser HS; Sept., 1997
    - 7th and 8th Graders transfer to Andretti MS; Sept., 1997
    - Mears Elementary Center
      - Feeder to Goodyear MS
    - Gache Elementary
      - Currently feeds Mears JHS
      - 6th Graders to be transferred to Andretti MS; Sept., 1997
      - Students to be transferred to new Mears EL Center; 9/97
    - Dobson Elementary
      - Currently feeds Mears JHS
      - 6th Graders to be transferred to Andretti MS; Sept., 1997
      - Students to be transferred to new Mears EL Center; 9/97
    - Sullivan Elementary
      - Currently feeds Mears JHS
      - 6th Graders transfer to Andretti MS; Sept., 1997
      - Students to be transferred to new Mears EL Center; 9/97
    - Foyt Elementary
      - Currently feeds Mears JHS
      - To become feeder to Andretti MS; Sept., 1997
      - 6th Graders transfer to Andretti MS; Sept., 1997

UNDERLINED schools are operational facilities in 1999 - 2000
0910b/101&102a

County -

High School Attendance Area

High School | **JHS / Middle** | **Elementary** | **Facility Redesignation** | **Closures**


Changes
Changes
Changes
Changes
Closes
Closes
Closes
Closes
Closes
Closes
Closes
Closes
- - - - - 1990 - 1991 Facility
[ ] 1990 - 1991 Enrollment
——— 1999 - 2000 Facility
([illegible]999 - 2000 Projected Enrollment

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Your County - Unse[illegible]gh School Attendance Area

High School

[1,260] (1,594)
Unser HS 10-12
9-12

JHS / Middle

[New] (758)
Goodyear MS 6-8

[ ] ( )

[ ] ( )

[954] (1,051)
Andretti JHS 7-9
MS 6-8

Elementary

[228] (212)
Brayton EL K-6
K-5

[245] (222)
St. James EL K-6
K-5

[265] (202)
Pruett EL K-6
K-5

[ ] ( )

[Redsg] (548)
Mears EL K-5

[297] (339)
Foyt EL K-6
K-5

[ ] ( )

Facility Redesignation

[54]
Cheever EL K-6
Becomes Bus Garage
Changes Sept, 1992

[ ]
Changes

[587]
Mears JHS 7-9
Becomes K-5 EL
Changes Sept, 1997

[ ]
Changes

Closures

[657]
Crawford JHS 7-9
Closes June, 1997

[193]
Tracy EL K-6
Closes June, 1997

[156]
Fox EL K-6
Closes June, 1997

[ ]
Closes

[85]
Gache EL K-6
Closes June, 1997

[102]
Dobson EL K-6
Closes June, 1997

[68]
Sullivan EL K-6
Closes June, 1997

[ ]
Closes

- - - - - 1990 - 1991 Facility
[ ] 1990 - 1991 Enrollment
——— 1999 - 2000 Facility
( ) 1999 - 2000 Projected Enrollment

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SUMMARY OF PRIORITIZED PROJECTS

2000 - 2010 Comprehensive Plan

Comprehensive Educational Plans are living documents. As such, they must be reviewed annually and amended to respond to unforeseen circumstances during the ten-year planning period. Based on the data compiled by the Comprehensive Educational Facilities Planning Committee, the following prioritized projects will be addressed within this planning period as funding becomes available.

SCHOOL	PROJECT	PRIORITY

SCHOOL	PROJECT	PRIORITY

TRANSLATING EDUCATIONAL NEEDS INTO FACILITY NEEDS
REVIEW AND RECOMMENDATIONS

Building Name & Address Phone Date

Building Number Grades Served Date of Original Construction Additions

Ten Year Enrollment Projections:

Year ____ Enrollment ________ Year ____ Enrollment ________

Year ____ Enrollment ________ Year ____ Enrollment ________

Year ____ Enrollment ________ Year ____ Enrollment ________

Year ____ Enrollment ________ Year ____ Enrollment ________

Year ____ Enrollment ________ Year ____ Enrollment ________

Existing Facility Data

Existing Facility: Based on conclusions derived from the MIP evaluation of the existing facility, generally describe the number, type and condition of all existing areas and building systems in the facility.

Existing Site: Based on the conclusions derived from the evaluation of existing facilities, provide a general description and adequacy or inadequacy of the existing site and site amenities.

Recommendations: Describe in detail the future use and recommended improvements that are to occur at this facility.

SBA147

BUILDING IMPROVEMENT COST SUMMARY

SCHOOL: ______________________________

Description	Priority	Anticipated Completion Date	Total Cost	Anticipated Funding Source
Site Improvements:				
			$	
			$	
			$	
New Construction:				
			$	
			$	
Renovations/Additions (List each separate):				
			$	
			$	
			$	
			$	
			$	
			$	
			$	
			$	
Others (Describe):				
			$	
			$	
			$	
A & E Fees at _____% on $_______________			$	
Project Management at _____% on $__________			$	
Survey, geotechnical, contingency and other			$	
Total Improvement Cost			$	

- - - - - - - - - - - - - - - - - - - -

SUMMARY OF FUNDING SOURCES:

Local	$	
Local Bond	$	
Local Levy	$	
SBA Needs	$	
SBA MIP	$	
Other (Describe) ____________________	$	

SBA147

HIGH SCHOOL ATTENDANCE AREA FACILITIES SUMMARY
____________ ATTENDANCE AREA

PROPOSED BUILDING USE AND CAPITAL IMPROVEMENTS

	BUILDING USE					BUILDING IMPROVEMENTS																				
SCHOOLS	Continued School	Closed School	Transitional School	New School (Replacement)	Consolidated School	New Construction (Addition)	Site Improvements	Building Repair	Bldg. Envelope Reno. (New Comp)	Interior Remodeling (Sp. Imp.)	New Interior Finishes	Window Replacement	Doors & Frame Replacement	Plumbing Renovations	Heating/Ventilation Improvement	Air Conditioning	Special Use Space Improvements (Tecnology, Media, etc.)	Roof Repair	Accessibility Improvements	Health & Safety Improvements	Furnishing & Equipment Imp.	Portable Replacement	Others (Identify)			

(SBA/WVDE 148)

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TOTAL ESTIMATED EXPENDITURE $ ____________________
IN THIS ATTENDANCE AREA

TEN YEAR COMPREHENSIVE PLAN EVALUATION

West Virginia Code 18-9D-16(g) and State Board Policy 6200, Article 100.19 requires all county boards of education to submit an objective evaluation of the ten year Comprehensive Educational Facilities Plan (CEFP). This evaluation shall be completed by the CEFP committee established by the local board to plan the 2000 ten-year plan consisting of community members and professional staff from each high school attendance area. The committee will familiarize themselves with the state board requirements of the plan and the current county CEFP prior to completing this evaluation form. All amendments to the plan since 1990 will be objectively evaluated for its effectiveness and completeness of projects within that plan. The following should be used to effectuate this evaluation of the 1990 ten-year plan and also be used as a means to improve future plans. Goals to be evaluated include WV Code 18-9D-16(g):

1. Student Health and Safety
2. Economies of Scale
3. Demographic Circumstances and Travel
4. Multi-County Projects
5. Curricular Improvements
6. Educational Innovations
7. Adequacy of Space for Projected Enrollments

(1 - Poor Rating; 3 - Adequately met the need or requirement; 5 - Excellent Rating)

1. Did the CEFP contain all data required in State Board Policy 6200?

   1 2 3 4 5

2. Was the data sufficient to allow prudent long-range planning decisions to be made regarding the educational direction and facility needs necessary to accomplish the desired goals of the ten-year plan?

   1 2 3 4 5

3. Was the original plan significantly amended during the ten-year cycle?

   Yes ____ No ____

   If the original plan was altered:

   (a) Did alterations in the plan generally prove to be positive changes?

   1 2 3 4 5

   (b) Did the amended plan effectively improve the county's ability to deliver the curriculum?

   1 2 3 4 5

   (c) Were the amendments generally politically initiated rather than educationally motivated?

   Yes _____ No _____

4. Were local and SBA funds used effectively for individual school projects that further the overall goals of the county plan and the goals of the SBA as defined in 18-9D-16(d)?

   1 2 3 4 5

5. To what degree has/will the projects identified in the ten year plan be effectively completed during this planning period?

   25% 50% 70% 80% 85% 90% 95% 100%

SBA/WVSDE 149

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Comments relative to the major issues (positive and negative) that led to the conclusions of the evaluation committee in Items 1 thru 5. (Additional comments may be attached)

Comments relative to improving the plan to be developed for the year 2000.

List Committee Members below:

Committee Chairperson

Date

EVALUATION OF C[illegible]PLETED PROJECTS
FROM THE 1990 CEFP

County____________________ **Projects Completed From 1990 to Report Date** Report Date____________________

School Name	Project Description	Project in Original 1990 CEFP Y/N	Project Amended into the CEFP Y/N	Project Completed, Not in the CEFP Y/N	Rate How Well Project Met the Overall SBA Criteria in WV Code 18-9D-16 * 1 2 3 4 5

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* 1. Did not achieve the objectives of the SBA - 3. Adequately met the SBA objectives or requirements - 5. Exceeded the expectations of the SBA objectives

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COPY FOR ADDITIONAL PAGES

REFERENCES

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1. A Master Plan for Public Education, West Virginia Board of Education, Charleston, WV, 1982-83.
2. Guide for Planning Educational Facilities, The Council of Educational Facilities Planners International, 941 Chatham Lane, Suite 217, Columbus, Ohio 43221.
3. West Virginia Board of Education - Policy 2510, Charleston, West Virginia.
4. School Laws of West Virginia
5. School Building Authority - Requirements for Educational Specifications, Latest Edition
6. American National Standards Institute, Inc., 1430 Broadway, New York, New York, 19918.
7. National Flood Insurance Program, Federal Emergency Management Agency, 105 South Street, Liberty Square Building, Philadelphia, Pennsylvania 10506.
8. Section 504 - Rehabilitation Act of 1973 (29 U.S.C. 794), Department of Health, Education and Welfare, Washington, D.C.
9. West Virginia Board of Education - Policy 2419, Charleston, West Virginia.
10. Uniform Federal Accessibility Standards.
11. Individuals with Disabilities Education Act (IDEA).
12. Americans with Disabilities Act.
13. Building Officials and Code Administrators International - Basic Building Code (B.O.C.A.), 17926 South Halstead Street, Homewood, Illinois 60430.
14. State Building Code of West Virginia (Latest Edition)
15. National Electrical Code - Supplement A, National Fire Association, Batterymarch Park, Quincy, Massachusetts 02269.
16. West Virginia Fire Code, Rules and Regulations of the West Virginia Fire Commission, Charleston, West Virginia.
17. Life Safety Code 101 and National Fire Code, National Fire Protection

Association, Batterymarch Park, Quincy, Massachusetts 02269.

18. Climatological Data for West Virginia, National Climatic Data Center, Asheville, North Carolina.

19. American Society of Heating, Refrigeration, and Air Conditioning Engineers, Inc., Atlanta, Georgia.

20. Energy Consumption Guidelines for Educational Facilities, West Virginia Governor's Office of Economic and Community Development, Fuel and Energy Office, Charleston, West Virginia.

21. Lighting Handbook, Illuminating Engineering Society, 1860 Broadway, New York, New York.

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